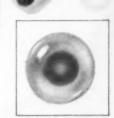
MARCH 1, 1955

MODERN

The Journal of Diagnosis and Treatment

MEDICINE







ERYTHROBLASTOSIS FETALIS



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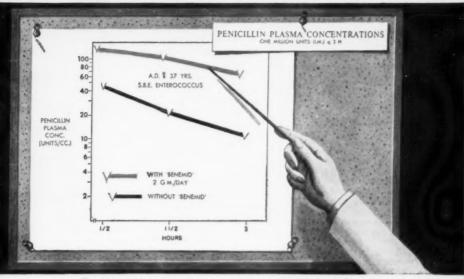
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Walter C. Alvarez
Editor-in-Chief

THE MAN ON THE COVER is Dr. Alexander S. Wiener of Brooklyn, head of the blood transfusion division of Jewish Hospital and director of the Wiener Laboratory. Dr. Wiener discovered the mechanism of heredity of Rh-Hr blood types and blocking and conglutina-tion tests for Rh sensitization. He is the founder of the Society for the Study of Blood and a life member of the American Association for the Advancement of Science. He has received the Alvarenga Prize from the College of Physicians of Philadelphia and the Burdick Award from the American Society of Clinical Pathology. Among Dr. Wiener's recent contributions to medical literature is the report on page 117, "Therapy for Erythroblastosis Fetalis."

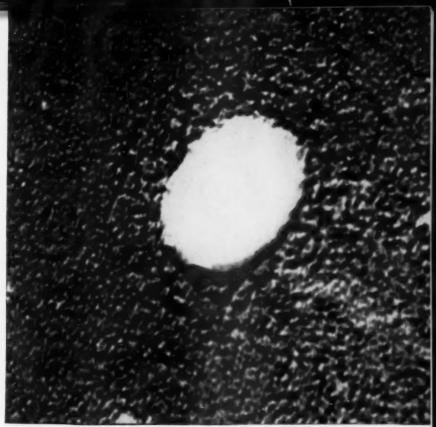


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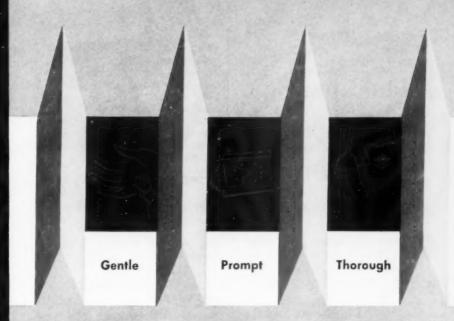
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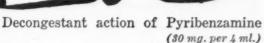
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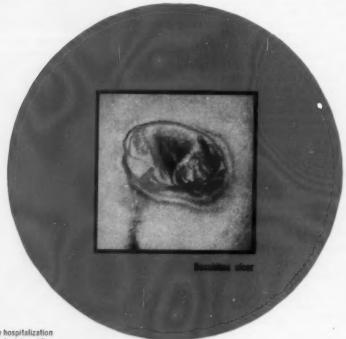
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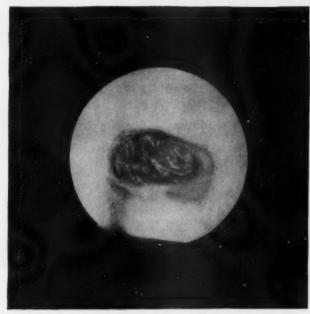
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Innerfield, I., Trypsin Given Intramuscularly in Chronic, Recurrent Thrombophlebitis, J.A.M.A., 156:1056-1058 (Nov. 13) 1954.

Golden, H., Intramuscular Trypsin, Its Effect in 83 Patients with Acute Inflammatory Disorders, Del. State Med. I., 26:267-270 (Oct.) 1954.

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A 24-hour diet of 900 Gm. of Sustagen® meets or exceeds the therapeutic nutritional recommendations of the Committee on Therapeutic Nutrition, National Research Council, † supplying:

Calories	3500	
Protein	210	Gm.
Fat	30	Gm.
Carbohydrate	600	Gm.

... plus therapeutic amounts of 16 important vitamins and minerals.

Dilution for tube feeding: 1 cup Sustagen to 10 oz. water.

Dilution for oral feeding: 1 cup Sustagen to 8 oz. water.

Sustagen is available through drugstores in 1 lb. and 21/2 lb. cans; to hospitals in 5 lb. cans also.

Mead's Tube Feeding Set is supplied individually packaged, ready for use.

† Therapeutic Nutrition, Publication No. 234, National Research Council.



by tube

Sustagen is given easily in hospital or home with Mead's new Tube Feeding Set. The small, smooth plastic tubing of this set is inserted and swallowed almost without sensation. Discomfort and intolerance long associated with tube feeding are practically eliminated.



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Sustagen makes a pleasant and satisfying food-drink. It can be used as a complete liquid diet or as a concentrated diet supplement for patients who cannot—or will not take enough solid food to meet their needs.

Write to Department A, Mead Johnson & Company, for your reprint of this recent clinical report on therapeutic nutrition, and for detailed information on Sustagen.

EVANSVILLE, INDIANA, U.S.A. MEAD



LETTER FROM THE EDITORS

Dear Reader:

Occasionally, we get a letter from a specialist who takes us to task for the reports we use in his specialty. "Too elementary," he says. "A man practicing in this specialty al-

ready knows everything you say in your report."

The letter writer is right. What he fails to appreciate is that the reports in ophthalmology, for instance, are not written to keep the ophthalmologist up to date. That is done by the journals devoted entirely to ophthalmology. What *Modern Medicine* tries to do is bring to all the men who are not specializing in ophthalmology the information in ophthalmologic journals that they should have. And so it is with every specialty.

The specialist who reads Modern Medicine does so to

keep pace with developments in other fields.

The general practitioner reads *Modern Medicine* for information in every field. He wants to know what can be accomplished by neurosurgery even though he never plans to operate on the brain. He finds this information useful to him because he is the first physician that most patients see, whatever their ills. It is just as essential for him to know what he cannot hope to treat as it is to know the best way of treating what is within his scope.

To the physician who keeps alive his intellectual curiosity, whether he is a general practitioner or a specialist, *Modern Medicine* is a must. It provides him with the most convenient and satisfactory way to get accurate information on new developments in every field, regularly. Twice a month it brings to his desk the latest medical news as reported in

medical publications throughout the world.

The Editors

The new intranasal preparation-

HYDROCORTISONE and two decongestants

'Vasocort' contains hydrocortisone — the most effective antiinflammatory agent—to reduce inflammation, edema and engorgement in the nose. Hydrocortisone is so effective that, when applied topically, maximum therapeutic response is achieved with an extremely low concentration. This low concentration—only 0.02%—is one of the reasons why 'Vasocort' produces none of the side effects commonly associated with systemic steroid therapy.

'Vasocort' also contains two superior decongestants: (1) phenylephrine hydrochloride—the most widely prescribed vasoconstrictor—for immediate onset of shrinkage, and (2) Paredrine* Hydrobromide for prolonged relief of nasal blockage. Yet, because each is present in relatively low concentration, 'Vasocort' seldom produces rebound turgescence.

Note: Despite the fact that 'Vasocort' contains hydrocortisone, it is not expensive.

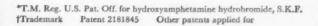
for acute, chronic and allergic rhinitis

R Vasocort Spraypak

07

'Vasocort' Solution

Smith, Kline & French Laboratories, Philadelphia 1





ANEMIA

accompanying
or following
infection

The "low-grade" anemia which so often accompanies or follows infection in children or adults, often is complicated by depressed bone-marrow function.¹

Cobalt appears to be the only known agent which can be used to stimulate the hemopoietic function of bone-marrow.

RONCOVITE (the original clinically proved pure cobaltiron product) provides the long-missing factor in the treatment of both iron-deficiency and "chronic low-grade" (secondary) anemia. The presence of cobalt may actually "force" the utilization of iron² where bone-marrow inhibition is present.

Extensive clinical evidence documents both the hemopoietic effectiveness and safety of Roncovite.

Clinical Proof— in Chronic Low-Grade Anemia

"REFRACTORY ANEMIA"

"With cobalt, an effective therapy for anemia accompanying infection is possible."³

CHRONIC SUPPURATIVE INFECTION

"In all patients a reticulocytosis was observed within 6 days. This was followed by increases in red-cell counts, in hemoglobin values, in blood volume and in total circulating hemoglobin."

POST-INFECTION ANEMIA

Excellent results⁵ have been reported in post-infection anemia.

RONCOVITE

The original, clinically proved, pure cobalt-iron product.

SUPPLIED:

RONCOVITE TABLETS

Each enteric coated, red tablet contains:

Cobalt chloride...... 15 mg. Ferrous sulfate exsiccated...... 0.2 Gm.

Bottles of 100

RONCOVITE-OB

Each enteric coated, red capsule-shaped tablet contains:
Cobalt chloride. 15 mg.
Ferrous sulfate. . . 0.2 Gm.
Calcium lactate. . . 0.9 Gm.
Vitamin D. 250 units
Bottles of 100

RONCOVITE DROPS

Each 0.6 cc. (10 drops) provides: Cobalt chloride

(Cobalt 9.9 mg.).... 40 mg. Ferrous sulfate..... 75 mg. Bottles of 15 cc. with calibrated dropper.

DOSAGE

One tablet after each meal and at bedtime. Children 1 year or over, 0.6 cc. (10 drops); infants less than 1 year, 0.3 cc. (5 drops) once daily diluted with water, milk, fruit or vegetable juice.

- Wintrobe, M. M.: Clinical Hematology, Philadelphia, Lea & Febiger, 1951, p. 419.
- 2. Wintrobe, M. M. et al.: Blood 2:323 (1947).
- Weissbecker, L.: Dtsch. M. Wschr. 75:116 (1950).
- Robinson, J. C., et al.: The New England J. M. 24:749 (1949).
- Weissbecker, L., and Maurer, R.: Klin. Wchnschr. 24-25:855 (1947).

Bibliography of 192 references available on request.

LLOYD BROTHERS, INC.

Cincinnati, Ohio

In the Service of Medicine Since 1870

Correspondence

Communications from the readers of Modern Medicine are always welcome. Address communications to The Editors of Modern Medicine, 84 South 10th St., Minneapolis 3, Minn.

Stilbestrol-Fattened Fowl

TO THE EDITORS: First we wish to compliment Dr. Leonard H. Biskind, author of the article, "Modern Concepts of Menstruation," on a clear explanation of a process which is often difficult to explain to the lay mind.

Second, we wish to comment on the footnote (p. 136) referring to chickens fattened by stilbestrol. Stilbestrol for use in chickens is subject to the New Drug Section of the Federal Food, Drug, and Cosmetic Act. The safety of the drug in the manner of its use must be demonstrated by sufficient data presented by the manufacturer, packer, or shipper. Directions for the use of stilbestrol were modified at our suggestion to provide for the insertion of one pellet containing 12 to 15 mg. of stilbestrol.

An article by Stobbs, Andrews, Zarro, and Beeson, published recently in the *Journal of Animal Science*, gives the following figures in micrograms of estrogen per gram of dried tissue after injection with a 15-mg. stilbestrol pellet:

Seven days after injection Twenty-eight days after injection 0.05 µg.

In terms of fresh tissue, the estrogen content twenty-eight days after injection is two parts per billion.

It seems scarcely credible that the microscopic amount of estrogen ingested from the treated birds could influence the menstrual cycle. We realize that the data quoted may not have been available at the time the article was in preparation.

ALBERT H. HOLLAND, JR., M.D.

Medical Director
Food and Drug Administration

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Food and Drug Administration Washington, D. C.

Plan for Narcotic Addicts

TO THE EDITORS: A recent editorial by Dr. Walter C. Alvarez (Modern Medicine, Dec. 15, 1954, p. 72) mentioned a plan to have narcotic addicts treated by physicians or clinics in their own neighborhoods instead of the usual practice of incarcerating them in jails or referring them to distant institutions.

Please be advised that this plan was introduced by Dr. Herbert Berger of the Richmond County Medical Society two years ago. It has been introduced before the House of Delegates of the American Medical Association for consideration by that body.

MILTON HULNICK

Staten Island, N.Y.



Tyzne brand of tetrahydrozoline hydrochloride

When ostia become blocked during a sinus attack, the pain and headache that follow are characteristic and predictable.

When **Tyzine** is used as a nasal spray or solution, the gratifying nasal decongestion that follows is likewise characteristic and predictable. Patency is attained almost immediately. **Tyzine** is odorless, tasteless, neither stings nor burns; and appears to be free from rebound congestion.

In a series of 203 patients, Fyzine was found "equal or superior to the most potent agents in current use." Twenty-two of these patients had acute or chronic sinusitis. Excellent relief was obtained in 20 patients and fair response in 2—and there were no adverse local or systemic reactions.

1. Menger, H. C.: New York State 1. Med., press.



PFIZER LABORATORIES

Division, Chas. Pfizer & Co., Inc. Brooklyn 6, New York supplied: As 0.1% aqueous solution—as Nasal Spray in plestic spray bottles containing ½ ounce of TYZINE, and Nasal Solution in bottles of 1 ounce.



. . and make a copy for Dr. Dillcroft. I understand he has a personal interest in this case."



- · Quick, effective immunity to Diphtheria,
- · Contains PUROGENATED® Toxoids, Aluminum Phosphate-Adsorbed. Free-Immunization Records that you can offer to parents. Ask the Lederle Representative or write.

LEDERLE LABORATORIES DIVISION AMERICAN Granamid company PEARL RIVER, NEW YORK TRADE-MARK



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CARBONATED BEVERAGES

non-cariogenic
in new medical study!



Oster et al. have demonstrated convincingly that the drinking of acidulated soft drinks

resulted in an instantaneous secretion of saliva which more than neutralized oral acidity. The salivary buffering response was so rapid that in 195 individuals, 96 per cent had an oral pH above the control within two minutes after drinking the beverage. Fifty-three per cent responded within 12 seconds. Hence the sugar in soft drinks does not remain in the mouth long enough to produce an acid concentration by fermentation, and the profuse flow of saliva in response to the tasteful beverage more than neutralizes any incidental oral acidity.

This study confirms prior studies which show that the drinking of soft drinks produces less oral acidity than most solid foods,² and the sugar solution in soft drinks

rapidly passes through the mouth with little or no contact with the teeth. For these reasons, the likelihood of a localized oral acidic condition favorable to caries is virtually non-existent.

- Oster, R. H., Proutt, L. M., Shipley, E. R., Pollack, B. R., and Bradley, J. E., J. Applied Physiol. 6:348-354, 1953.
- Bibby, B. G., Goldberg, H., and Chen, E.: J.A.D.A. 42:491-509, 1951.

The American Bottlers of Carbonated Beverages is a non-profit association of manufacturers of bottled soft drinks, with members in every State. Its purposes...to improve production and distribution methods through education and research, and to promote better understanding of the industry and its products.



when patients are

tense

anxious

jittery

emotionally "bushed"



BUSINESS PRESSURES



FAMILY WORRIES



DEPRESSION

Doctor:

A Personal Message!

Many physicians use SECONESIN personally. They find that one tablet helps them relax after a busy day absorbing patients' emotional and physical worries. If you would like a package for office or home use please let us know. We will send it, without charge, immediately.



MENOPAUSE



PREMENSTRUAL TENSION

When safe, modern, relaxant-sedative

SECONESIN

to relax both mental and physical tensions

SECONESIN is the IDEAL "DAYTIME" SEDATIVE

It relaxes without making patients sleepy, logy, or mentally confused. Renews their ability to concentrate on the day's work.

SECONESIN gives patients a RELAXED EUPHORIA

They comment freely on their new and relaxed feeling of well-being, so different from the stimulated euphoria of amphetamine-like drugs.

SECONESIN is SAFE

Both components act promptly and are promptly eliminated.

SECONESIN is DIFFERENT

It even looks different from the usual sedative prescription — a psychological advantage in many cases.



Combines safe relaxant mephenesin with safe sedative secobarbital. "There seems to be a definite clinical potentiation of the beneficial properties of each drug by the other when they are administered together." (Friedlander, H. S., Medical Times, June, 1953)

Usual Dose: 1 tablet f.i.d., preferably after meals: 1 or 2 tablets at bedtime.

Supply/a Lime-green, scored fablets each containing mephenesin 400 mg., secobarbital 30 mg. Bottles of 50, 100, 500.

send for Samples and literature

SECONESIN is a distinctively different prescription-only product of

CROOKES LABORATORIES, INC.

Therapeutic Preparations for the Medical Profession

MINEOLA, NEW YORK



Questions & Answers

All questions received will be answered by letter directed to the petitioner; questions chosen for publication will appear with the physician's name deleted. Address all inquiries to the Editorial Department, Modern Medicine, 84 South Tenth Street, Minneapolis 3, Minnesota.

Cold Weather Allergy

QUESTION: During cold weather, a 40year-old man has a macular rash on portions of the body which are not usually exposed to the elements. The only effective treatment is infrared therapy. What is the physical or chemical treatment of sensitivity to cold?

M.D., California

ANSWER: By Consultant in Allergy. This man certainly has a physical allergy. Many treatments have been recommended for this condition, but none has been effective. The therapy most frequently advised is slow exposure to cold. The patient should be exposed to cold air every day, gradually lengthening the time. Exposures should be to moderately cold air at first and later to lower temperatures.

Care of Colostomy

QUESTION: What is the proper care of a permanent colostomy? M.D., Colorado

ANSWER: By Consultant in Proctology. A person with a colostomy usually obtains the best results by irrigating the colostomy with plain warm water each morning, although

irrigation every other day is sufficient in some patients. The irrigating apparatus includes a No. 22 or No. 24 catheter and a 4-oz. Asepto syringe.

Usually the apparatus need not be worn during the day. Once the bowel is well cleaned out, a piece of gauze and a support are placed over the opening. Most patients who irrigate daily are free from gas or stool eruptions. The patient should eat a normal diet and avoid highly spiced foods.

Hay Fever

QUESTION: A 40-year-old woman has had hay fever for five years. The patient also has almost complete loss of taste and smell. However, periods of normal taste and smell sometimes occur for about half an hour. She is now receiving antihistamines. Is any form of therapy available?

M.D., New York

ANSWER: By Consultant in Allergy. This patient may never fully regain taste and smell, although therapy may restore the nasal passages to a good condition. Nevertheless, the nasal allergy should be controlled, for in rare instances these senses have suddenly returned.



THE FAMILY ALBUM OF

LILLY VITAMINS





OPTIMAL NUTRITION DURING PREGNANCY

Prenalac

(Prenatal Nutritional Supplements, Lilly)

Six pulvules provide complete daily vitamin and mineral allowances as recommended by the Food and Nutrition Board of the National Research Council. Gaycolored pink-and-blue pulvules quickly win patient acceptance.

DOSE: 3 to 6 pulvules daily, as indicated. In bottles of 100, 500, and 1,000.





FOR BABY

VI-WIX DIODS

No other pediatric vitamin is so stable. Delicate moisture-labile vitamins are sealed powder-dry in a separate bottle to assure full potency the day of use. Another container provides the more stable vitamins-A, D, pyridoxine hydrochloride, pantothenic acid, and nicotinamide—in the orangeflavored vehicle. To constitute, simply empty the vehicle into the bottle containing the powder and shake gently. Note especially the high B12 and ascorbic acid content. This is the product to specify for the critical early months of rapid growth.

each 0.6 cc. provides:

each o.o cc. provides		
Thiamin Chloride		1 mg.
Ribofavin		1 mg.
Pyridoxine Hydrochloric	le	0.5 mg.
Pantothenic Acid (as So	dium	
Pantothenate)		3 mg.
Nicotinamide		10 mg.
Ascorbic Acid		75 mg.
Vitamin B12 (Activity Equ	vivalent)	3 mcg.
Vitamin A Synthetic	5,000	U.S.P. units
Vitamin D Synthetic	1,000	U.S.P. units

DOSE: Under 6 months—0.3 cc. daily.

Over 6 months—0.6 cc. daily.

In 30-cc. and 60-cc. sizes.



FOR GROWING TOTS

'Homicebrin

The original homogenized multiple viramin product. Homogenized for easy absorption, taste-tested for flavor. Children love it.



each teaspoonful (5 cc.) provides:

Vitamin A (Palmitate)	3,000 U.S.P. units
Thiamin Chloride	1 mg.
Riboflavin	1.2 mg.
Vitamin B ₁₂ (Activity Equiva	ilent) 3 mcg.
Ascorbic Acid	60 mg.
Vitamin D	1,000 U.S.P. units

DOSE: Prophylactic—1 teaspoonful daily. Therapeutic—2 to 4 teaspoonfuls daily. In 60-cc., 120-cc., and pint bottles.



FOR FINICKY 'TWEENAGERS

Multice bring

Something different and more "grown-up" than drops or teaspoons, 'Multicebrin' Jr. is tailored for potency, size, and color for the 5-to-12-year age group—the busiest lunch-gulpers on earth.

DOSE: Usually 1 gelseal daily. In bottles of 60 and 1,000.

each gelseal provides:

Thiamin Chloride	1.5 mg.
Riboflavin	2 mg.
Pyridoxine Hydrochloride	1 mg.
Pantothenic Acid (as Calcie	im
Pontothenate)	2.5 mg.
Nicotinamide	12 mg.
Vitamin B ₁₃ (Activity Equive	ilent) 3 mcg.
Folic Acid	0.1 mg.
Ascorbic Acid	75 mg.
Alphatocopherol (as Alpha	tocopheryl
Succinata)	5 mg.
Vitamin A Synthetic	5,000 U.S.P. units
Vitamin D Synthetic	500 U.S.P. units



FOR BUSY TEENAGERS AND HARRIED PARENTS

Multicebrin

(Pan-Vitamins, Lilly)

All things considered, the "best buy" in the quality multiple vitamin market. In quality, formula, and price, 'Multicebrin' has no equal.

DOSEs Usually 1 gelseal daily. In bottles of 100 and 1,000.

each gelseal provides:

Thiamin Chloride	3 mg.
Riboflevin	3 mg.
Pyridoxine Hydrochloride	1.5 mg.
Pantothenic Acid (as Calcium	
Pantothenate)	5 mg.
Nicotinamide	25 mg.
Vitamin B ₁₃ (Activity Equivalent)	3 mcg.
Folic Acid	0.1 mg.
Ascorbic Acid	75 mg.
Distilled Tocopherols, Natural Typ-	e 10 mg.
Vitamin A Synthetic 10,0	00 U.S.P. units
Vitamin D Synthetic 1.0	00 U.S.P. units



FOR THE GRANDPARENTS

'Mi–Cebrin'

(Vitamin-Mineral Supplements, Lilly)

A potent, comprehensive dietary supplement. 'Mi-Cebrin' provides eleven essential vitamins plus ten minerals in a special laminated tablet which insures stability of all ingredients. Designed especially for the patient past forty, 'Mi-Cebrin' affords both broad and adequate therapy.

DOSE: Usually 1 tablet daily. In bottles of 100 and 1,000.



WHEN VITAMIN DEFICIENCIES ARE SEVERE

`Theracebrin

(Pen-Vitamins, Therapeutic, Lilly)

The most potent multiple vitamin you can prescribe—especially in major surgery, severe burns, infectious hepatitis.



RESEARCH

ELI LILLY AND COMPANY INDIANAPOLIS 6, INDIANA, U.S.A.

each gelseal provides:

Thiamin Chloride	15 mg.
Riboflavin	10 mg.
Pyridoxine Hydrochloride	3 mg.
Pantothenic Acid (as Calcium	
Pantothenate)	20 mg.
Nicotinamide	150 mg.
Vitamin B ₁₂ (Activity Equivalent)	10 mcg.
Folic Acid	0.33 mg.
Ascorbic Acid	150 mg.
Distilled Tocopherols, Natural Type	25 mg.
Vitamin A Synthetic 25,000	U.S.P. units
Vitamin D Synthetic 1,500	U.S.P. units

DOSE: 1 or more gelseals daily. In bottles of 30, 100, and 500.

QUESTIONS & ANSWERS

Pernicious Anemia

QUESTION: What is the present opinion regarding the use of vitamin B₁₂ concentrate and refined solution of liver extract in pernicious anemia with slight neurologic symptoms? What is the average dose required of each?

M.D., Connecticut

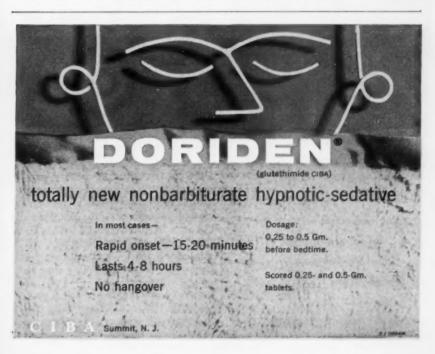
ANSWER: By Consultant in Hematology. Adequate dosage of vitamin B_{12} as crystalline vitamin B_{12} , vitamin B_{12} concentrate, or as contained in refined liver extract generally controls pernicious anemia and prevents the further progression of neurologic symptoms. This is especially true when patients have access to a full diet.

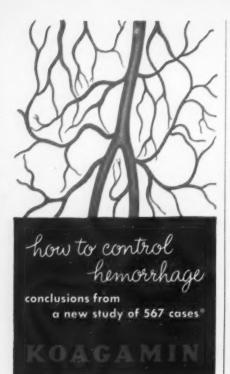
Liver extracts for parenteral use are now marked according to the vitamin B_{12} content. Dosage is therefore stated in terms of vitamin B_{12} . The average dosage for pernicious anemia with slight neurologic symptoms varies, but 45 μg . each week is usually adequate.

Diabetes Insipidus

QUESTION: A 50-year-old woman with diabetes insipidus had reverse reactions from injections with posterior pituitary extract. What is the latest treatment? Is nasal insufflation with a pituitary powder permissible? M.D., California

ANSWER: By Consultant in Diabetes. For short-acting antidiuretic effect, 0.1 to 1 cc. of posterior pituitary extract may be given subcutaneously. The usual dosage is 0.1 to 0.5





"... Unique blood-clotting faculty, acting promptly... will often obviate the use of transfusion.... Preoperatively tends to reduce blood loss and to facilitate surgical procedures.... Over an eleven-year period no untoward effects..."

containing oxalic and malonic acids in aqueous solution. Supplied in 10-cc. diaphragm-stoppered vials.

*Joseph, M.: Am. J. Surg. 87:905, 1954.

CHATHAM PHARMACEUTICALS, INC.
Newark 2, New Jersey 04554

cc., but unpleasant reactions may follow large doses.

Pitressin tannate in oil, 5 units per cubic centimeter in doses of 0.5 to 1 cc. every twenty-four to forty-eight hours, controls diabetes insipidus in many patients. Pregnant or hypertensive patients and those with coronary artery insufficiency should not be given aqueous solutions of the drug. Pitressin tannate is given intramuscularly in the smallest effective dose at intervals which give the patient satisfactory relief.

Nasal insufflation with a posterior pituitary powder is simple and relatively inexpensive. A 40mg, capsule may be insufflated once or several times daily.

Vaginal Bleeding

QUESTION: A 43-year-old patient had a supracervical hysterectomy four years ago; the ovaries were not removed. She recently noticed slight bleeding from the vagina which occurred only once. Nothing in the vaginal mucosa was observed which might cause the bleeding. Examination reveals a cervical stump about 3 cm. in length which is apparently tender but not adherent. A Papanicolaou smear was negative. Can carcinoma be definitely excluded?

M.D., New York

ANSWER: By Consultant in Gyne-cology. Under these circumstances, the Papanicolaou smear is not conclusive. Since a bleeding point was not seen in the vagina, examination must definitely prove that the patient does not have carcinoma. A cone-type biopsy should be done in which tissue is removed from as high a level in the cervical canal as possible. The section must be blocked and studied before cancer can be established or excluded.

hatham

particularly useful in establishing and maintaining

WEIGHT REDUCING HABITS

in obese patients who are:

- . EMOTIONALLY DISTURBED
- . HYPERTENSIVE
- . ARTHRITIC
- . SURGICAL CASES
- . PREGNANT
- . AGED
- . DIABETIC

Singularly free from side reactions of nervousness, irritability, loss of sleep, palpitation.

BIPHETACEL

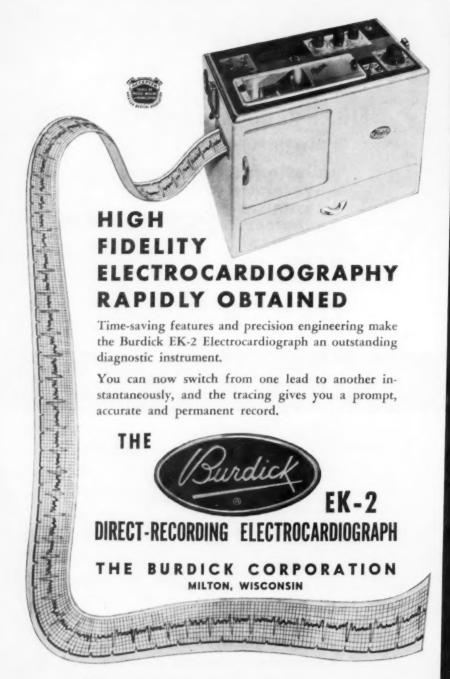
FORMULA: Cxclusive 1:3 L/D ratio

BY R ONLY

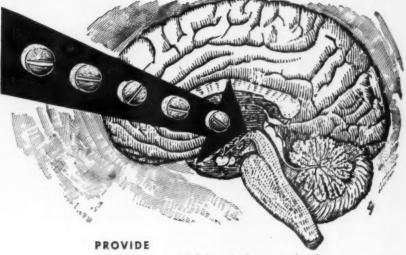
DOSAGE: 1 tablet 1 hour before meals



R. 1. STRASENBURGH CO., ROCHESTER 14, N. Y., U.S.A.



SECODRIN TABLETS



Symptomatic relief from Psychosomatic disturbances

COUNTERACT

Anxiety, abnormal dread or fear, discouragement, gloom, depression, nervousness

ALLAY

Sensation of hunger, thereby lessening tendency to overeating

CREATE

Sense of well-being without untoward after-effects

Each Secodrin tablet contains; secobarbital 30 mg. methamphetamine hydrochloride 5 mg.



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SOUTH HACKENSACK, NEW JERSEY

THE P		Laboratories, Inc., South Hackensack, N. J. me a professional sample of
Physicians' sample of this new PREMO	30 Secodrin	tablets.
specialty.	Address	
	City	State



Forensic Medicine

ARTHUR L. H. STREET, LL.B.

Prepared especially for Modern Medicine

Compensation—Hernia

PROBLEM: A statute provides for disability allowance when a disease is aggravated by an industrial accident. Was a worker entitled to an award for aggravation of preexisting hernia?

COURT'S ANSWER: Yes.

The Florida Supreme Court said that another statute, excluding right to compensation for hernia existing before accidental injury, should not be read as preventing compensation for aggravation (75 So. 2d 762).

Malpractice—Waiver of Claim

PROBLEM: A motorist injured in a collision engaged a doctor to treat her injuries. After she secured judgment against the driver of the other car, could she sue the doctor for damages on the ground that the treatment was negligent?

COURT'S ANSWER: No.

Following a rule of law that has been recognized in many other states, the Maine Supreme Judicial Court reasoned: If a person injured by another employs a reputable physician, the person who caused the injury is liable for an increase in damage during treatment (131 Me. 192, 160 Atl. 30).

physiologic answer to epidemic vomiting

EMETROL°

Phosphorated Carbohydrate Solution

A unique formula for oral administration . . . containing no drugs likely to induce untoward effects . . . and stabilized at an optimally adjusted pH, EMETROL has proved dramatically effective in epidemic and other types of functional vomiting.¹⁻³ In an 18-month study, Bradley and associates obtained excellent responses in 172 children, often with a single dose of 1 to 3 teaspoonfuls. EMETROL is easy and pleasant to take, safe for all age groups.

IMPORTANT: EMETROL must always be taken undiluted. No fluids should be allowed for at least 15 minutes after each dose.

DOSAGE: For infants and children, 1 or 2 teaspoonfuls every 15 minutes until vomiting stops. For adults, 1 or 2 tablespoonfuls.

SUPPLIED: In bottles of 3 fl.oz. and 16 fl.oz., through all pharmacies.

in nausea of pregnancy, EMETROL has produced favorable response in 3 out of every 4 cases, usually within 24-48 hours.² Recommended as "free of annoying side effects...a safe and physiologic agent..."

I. Bradley, J. E., et al.: J. Pedist. 38:41, 1991. 2, Crunden, A. B., Jr., and Davis, W. A.: Am. J. Obst. & Gynec. 69:311, 1995. 3. Tebrock, H. E., and Fisher, M. M.: M.: Electric Conference on the Conference o

Literature and sample on request

KINNEY & COMPANY, INC.



brings a high concentration of sulfathiazole directly to the site of oropharyngeal infection — producing the most prolonged, effective local antibacterial levels with virtually no systemic absorption.

Now — even more pleasing flavor and chewing texture.

3¾ grains of Sulfathiazole in pleasant chewing gum form.

White Laboratories, Inc., Kenilworth, N. J.

Abortion—Circumstantial Proof

PROBLEM: In a prosecution for fatal abortion, testimony tended to show that the accused doctor had packed the patient's womb. He denied having administered any treatment except a hypodermic. Could the jury discredit his testimony because he admitted receiving \$30 for what he did?

COURT'S ANSWER: Yes.

The United States Court of Appeals, District of Columbia, said that his testimony could hardly be reconciled with the payment (105 Fed. 2d 792).

Bills-Husband's Liability

PROBLEM: When a woman sued for injury in an accident, could her husband join in the suit to compel defendant to reimburse him for medical expenses incurred in treatment of his wife's injuries?

COURT'S ANSWER: Yes.

The Wisconsin Supreme Court said that unless there was proof to the contrary, it must be presumed that husband owed the medical bill, since a husband is usually primarily liable for medical services rendered to his wife (66 N.W. 2d 346).

Expert Testimony—Poisoning

PROBLEM: At a homicide trial, physicians and chemists who had performed postmortem examination and chemical analysis testified that they believed death was caused by strychnine. Could the evidence be received without proof that strychnine was not used in embalming the body since use of the poison in embalming fluid was forbidden by state law?

COURT'S ANSWER: Yes.

The Nebraska Supreme Court said that it would be presumed that the law was obeyed (215 N.W. 785).



Is there a difference between ACTH and cortisone (or hydrocortisone) at the adrenocortical level?



Yes, There Is A Difference!



THERE IS A
DIFFERENCE
BETWEEN ACTH
AND CORTISONE

ACTH therapy stimulates the adrenal cortex to produce larger amounts of the vital corticosteroids, the greatest gain being made in the compound F-like steroids (hydrocortisone). The increase in steroid output bears a relation to the amount of ACTH administered. According to a general rule of physiology, increased activity is followed by an increase in secretory tissue, and the adrenal cortex remains fully functional and responsive under ACTH therapy.

In contrast, cortisone therapy inactivates the pituitary-adrenal system. Secretion of adrenal corticoids ceases. Without secretory activity the adrenal cortex begins to shrink and may undergo complete atrophy, thereby becoming nonresponsive to stress.



HP*ACTHAR*Gel is The Armour Laboratories Brand of Purified Adrenocorticotropic Hormone—Corticotropin (ACTH).



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A DIVISION OF ARMOUR AND COMPANY-KANKAKEE, ILLINIOS

against staphylococci



week-old infant. Note extreme sensitivity of the organism to tonsillitis ... obscess bronchopneumonia ... empyema ... carbuncle this is an actual strain of Staphylococcus aureus, isolated from a flye-ERYTHROCIN—although it easily resists the four other antibiotics. This organism may be associated with sinusitis ... offis media . . furunculasis pharyngitis

against coccic infections... for specific therapy

that's the story of ERYTHROCIN Filmtab*. As you know, Wide range activity against gram-positive pathogensby staph-, strep- or pneumococci. And that is the very most bacterial respiratory infections are produced range where ERYTHROCIN is most effective. In fact, you'll find it more active against this group of organisms than many other antibiotics.



ETHENTOCIN STEARTE, ABBOTT) STEARATE

against common intestinal flora



This sensitivity test shows ERYTHBOCIN and the same antibiotics against a typical strain of E. cali. Note that ERYTHBOCIN and penicillin do not affect growth of the organism—while the other optibiotics show marked inhibitory action. Since ERYTHBOCIN is inactive against gram-negative organisms, it is less likely to cause alteration in common intestinal flora—with an accompanying low incidence of

... with little risk of serious side effects

One reason is because the drug acts specifically.

It destroys coccic invaders, yet doesn't materially change the normal intestinal flora. Thus, side effects are rarely encountered with Erythrocin. Nor does it cause the allergic reactions occasionally seen with penicillin. abbott



Eruthrocin Stearate

TH FOR ABSOTT'S FILM SEALED TABLETS, PAT. AFPLIED FOR

FORENSIC MEDICINE

Witnesses-Medical Experts

PROBLEM: In a workmen's compensation proceeding, a medical expert testified that death from aplastic anemia may have been caused by poisoning from benzene derivatives. Should this testimony have been disregarded because it was not positive?

COURT'S ANSWER: No.

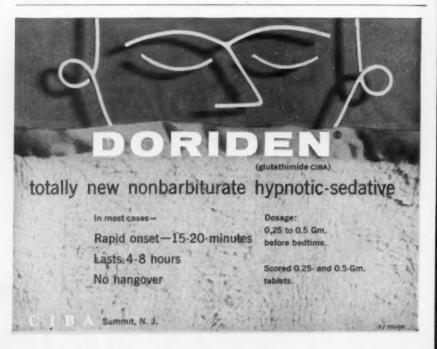
The New York Supreme Court, Appellate Division, said that when a case involves an uncommon disease, caution on the part of a physician is commendable. Opinions of experts should be fortified by detailed explanation and any additional information that adds to the reasonableness and probable correctness of the testimony (134 N.Y. Supp. 2d 377).

Insurance—Invalid Application

PROBLEM: An applicant for life insurance had previously been treated and hospitalized on account of abdominal pains. He was hospitalized for cancer of the colon shortly after the policy was issued and died about nine months later. Was insurer liable beyond return of premium paid, since insured did not know that he had cancer when he applied for the policy and was told by the medical examiner that he need not mention inconsequential illnesses in the application?

COURT'S ANSWER: No.

The Colorado Supreme Court thought that the evidence showed that the patient had intentionally misrepresented information concerning his previous physical state (275 Pac. 2d 940).



Diamox* ACETAZOLEAMIDE LEDERLE

NOW ACCEPTED FOR USE IN

EPILEPSY'

Recent clinical trials show that DIAMOX suppresses both the frequency and severity of epileptic seizures. DIAMOX appears to produce a relative acidosis, in a manner similar to the ketogenic diet, and may also have a direct effect on nerve tissue. No direct sedative action is apparent.

GLAUCOMA²

Oral administration of DIAMOX is followed by significant reduction in intraocular pressure in acute glaucoma. Experimental evidence indicates decreased secretion of aqueous humor. DIAMOX also appears to enhance the action of commonly employed miotics.

CARDIAC EDEMA

Now the most widely prescribed drug of its type, Diamox has been immediately accepted by clinicians because it is an effective, safe and convenient *oral* diuretic.

Available in 250 mg. tablets and 500 mg. ampuls for intravenous use.

 MERLIS, S.: Diamox: A Carbonic Anhydrase Inhibitor—Its Use in Epilepsy. Neurology. 4:11, 863-866 November 1954.

 Becker, B.: Decrease in Intraocular Pressure in Man by a Carbonic Anhydrase Inhibitor, Diamox, Am. J. Ophth. 37:1, 13-15 January 1954.



LEDERLE LABORATORIES DIVISION AMERICAN GARANTE

REG. U.S. PAT. OFF.

PEARL RIVER, NEW YORK

Insurance—Right to Benefits

PROBLEM: A Navy serviceman held a national service life policy and was given an honorable medical discharge for total disability after removal of a cancerous tumor from his chest. He received total disability payments for nearly two years but returned to civilian work when disability benefits were cut 30%. Shortly afterward he died of cancer. He did not know the exact nature of his ailment until he was near death. Was his widow entitled to the \$10,000 death benefit provided by the policy, although premiums had not been paid and there had been no formal application for waiver of premiums until she made it?

COURT'S ANSWER: Yes.

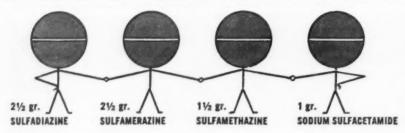
A United States District judge said that the insured's failure to apply for a waiver of premiums was excused because the government doctors did not inform him of the severity of his condition and that the widow's prompt application for waiver of premiums kept the insurance in force (125 Fed. Supp. 508).

Expert Testimony-Weight

PROBLEM: When opinions of medical experts in a personal injury suit conflict, has the judge or jury a right to consider the character, ability, skill, opportunity for observation, and state of mind of the experts in weighing the opinions?

COURT'S ANSWER: Yes.

So decided the Illinois Supreme Court (377 Ill. 169).



Only FOUR-SULFA Gives

- GREATEST POTENCY against the greatest number of infections.
- Broader bacteriostatic activity.
- Excellent tissue distribution with MINIMUM TOXIC REACTIONS — maintaining highest blood levels.

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SPECIFICALLY FOR THE HYPERTENSION THAT "COMES WITH AGE"

- improves circulation
- · induces a sense of well-being
- helps protect against cerebral accidents

Veratrite is the drug of seasoned judgment in managing the hypertension that "comes with age."

It is specific for the older hypertensive for whom potent hypotensive agents are contraindicated.

Veratrite improves circulation to vital organs, relieves headaches and dizziness, and induces a distinct sense of well-being without excessive euphoria.

Each Veratrite tabule contains:

Cryptenamine*......40 C.S.R.† Units (as tannate saits)
Sodium Nitrite...........1 gr.

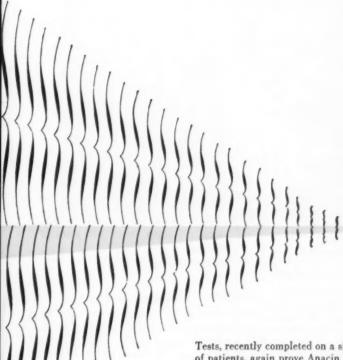
 Ester alkaloids of Veratrum viride obtained by an exclusive Irwin-Neisler nonaqueous extraction process

† Carotid Sinus Reflex

Bottles of 100, 500 and 1000.

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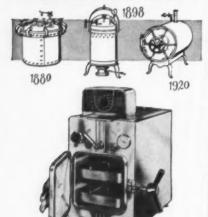
speed tests prove Anacin fastest acting analgesic



Tests, recently completed on a significant number of patients, again prove Anacin to be a faster acting analgesic than either aspirin or a buffered type aspirin. Patients who received Anacin revealed the presence of the main metabolite of phenacetin in the bloodstream minutes before any salicylates could be detected. Results were confirmed in subsequent tests. The type of quick, dependable relief that Anacin provides is available to your patients who may obtain Anacin at the nearest pharmacy.

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FROM ABROAD

HUNGARY

Hypertension and Glaucoma

A close relationship apparently exists between hypertensive cardiovascular disease and glaucoma, according to Dr. Imre Brand of the University of Pécs.

An evaluation of 119 patients with glaucoma observed since 1930 revealed a high incidence of hypertension, arteriosclerosis, and cerebrovascular accidents. During the observation period, 44 patients died, 4 of cardiac disease and 12 of cerebral hemorrhage. Among the 75 surviving patients, 5 had had cerebrovascular accidents. Almost half of the patients studied had systolic blood pressures above 170 mm. of mercury.

Ophthalmologica (Basel) 128:281-287, 1954.

Uterine Activity

Changes in body position may influence the force and number of uterine contractions during the early stages of labor. Drs. S. Lóránd and T. Pogány of the Arpád Hospital, Budapest, measured uterine contractions with a tokergometer and found that contractions diminished temporarily in 32 of 60 patients when a supine position was assumed. An increase in uterine muscle tone was noted in the upright position. These observations may help in choosing a position for patients with primary uterine inertia.

Gynaecologia (Basel) 138:374-382, 1954.



ELECTRON PHOTONICROGRAPH

Streptococcus pyogenes 24,000 x

Streptococcus pyogenes is a Gram-positive organism commonly involved in a great variety of pathologic conditions, including scarlet fever * tonsillitis * pharyngitis * otitis media * sinusitis bronchopulmonary disease * pyoderma * empyema * septicemia * meningitis mastoiditis * vaginitis * rheumatic fever * acute glomerulonephritis

It is another of the more than 30 organisms susceptible to

PANMYCIN

100 mg. and 250 mg. capsules
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POSTINFECTION
NEURITIS

USE

PROTAMIDE

PROMPTLY

for faster, surer recovery without relapse

In post-infection neuritis (following upper respiratory or virus infection), one ampul of Protamide daily for five days has been shown to produce complete recovery without relapse in 85% of patients when treatment was started during the first week of symptoms.*

You can count on comparable results in your own practice when you

USE PROTAMIDE FIRST

for patients with post-infection neuritis, herpes zoster and certain other nerve root pain problems.

Pharmacologically safe and clinically assayed, Protamide is a sterile colloidal solution prepared from animal gastric mucosa. Due to an exclusive, unique denaturing process, protein reaction cannot be demonstrated with Protamide although it is of protein origin.

The solution is straw colored with an adjusted pH of 5.9. It is virtually painless on administration and is used intramuscularly only.

Protamide is stable at room temperature and is packaged in 1.3 cc. ampuls in boxes of ten.

*Smith, R. T., New York Med. 8:16, 1952.



FROM ABROAD

GERMANY

Fibrinolysis Test

The fibrinolytic activity of the blood serum varies with the age and general condition of the individual. In healthy persons the activity is greatest between 20 and 30 years of age.

Drs. F. H. Schulz and H. Knobloch of the University of Leipzig tested the changes in the fibrinolytic activity of the serum in patients with hepatitis, liver cirrhosis, and acute cholecystitis. The highest fibrinolysis readings were obtained in patients with liver cirrhosis; the peak of activity was reached about one hour after clotting. Fibrinolytic activity in patients with epidemic

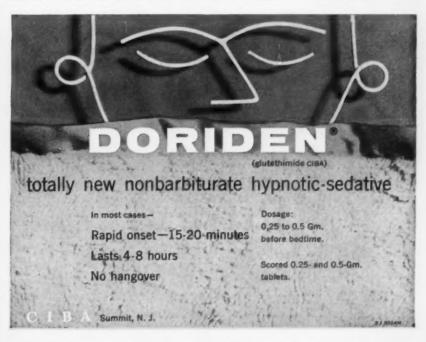
hepatitis was only slightly higher than in healthy individuals; in severe forms, with liver damage, however, the values tended to increase.

No deviations from normal were found in patients with acute cholecystitis.

München, med. Wchnschr. (Munich) 96: 1226-1227, 1954.

Prolonged Gestation

Although most cases of gestation beyond term are results of mistakes in calculation, true postmaturity is associated with definite dangers for the child. Dr. Heinrich Heberer of the University Hospital, Homburg-Saar, observes that when gestation goes beyond term pro-



FROM ABROAD

longed stationary weight in the mother or loss of weight signifies fetal distress. Labor should then be induced.

Deutsche med. Wchnschr. (Stuttgart) 79: 1594-1598, 1954.

Eve Damage from Tear Gas

When chloroacetophenone, bromacetone, and other tear gases are used in high concentrations, the eye may be permanently injured. Chloroacetophenone is apparently the most dangerous since unvaporized particles may contact the eye if the gas is exploded at close range.

Dr. Karl Hartmann of Hannover warns that the agents irritate the conjunctiva, the eyelids, and cornea and cause deep corneal necrosis. Immediate and repeated eye irrigations, heat, and application of ophthalmic ointment containing Priscoline are recommended to avert vasospasm and necrosis.

When only superficial layers of the cornea are damaged, recovery may be almost complete; if damage is deep, scarring will impair vision. Klin. Monatsbl. Augenh. (Stuttgart) 125:475-479, 1954.

Lung Surgery Preparation

Preoperative bronchoscopic, bronchographic, and tomographic examinations are mandatory in the preparation of a patient for lung surgery.

(Continued on page 58)

Redisol.

CRYSTALLINE VITAMIN B12

versatile and potent antianemic agent

MAJOR ADVANTAGES: Remits the disabling symptoms of pernicious anemia. Stimulates hemopolesis. Builds up appetite.

Small doses of vitamin B₁₂ produce the same response in pernicious anemia as injections of potent liver extracts. REDISOL—pure vitamin B₁₂—also produces similar results in many cases of nutritional macrocytic anemia, megaloblastic anemia of infancy, tropical and non-tropical sprue.

Available as REDISOL Tablets, 25, 50,

100, 250 mcg.; REDISOL Elixir, 5 mcg. per 5 cc.; and REDISOL Injectable, 30, 100 and 1,000 mcg. per cc.



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antispasmodic action virtually without atropinism .

through the selective spasmolysis of homatropine methylbromide (one-thirtieth as toxic as atropine)... plus the sedation of phenobarbital.

Each yellow tablet of MESOPIN-PB° or teaspoonful of yellow elixir contains 2.5 mg, homatropine methylbromide and 15 mg. phenobarbital. Also available as

MESOPIN Plain (without phenobarbital) in white tablets, green elixir, and powder.

MESOPIN

Samples? Just write to:

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Announcing New High Potency

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Higher penicillin blood levels—200,000 units per tablet

Lower daily dosage—only 4 tablets a day

Superior new antihistamine—exceptionally potent, unusually low incidence of side reactions

- ...prevent and control secondary bacterial infections
- ...while relieving symptoms of the common cold and other ill-defined respiratory infections

CILLIN-200

In a single convenient tablet, A-P-Cillin-200 combines three widely prescribed therapeutic agents for management of acute upper respiratory infections.

Each A-P-Cillin-200 tablet contains:

- ANTIHISTAMINE—for local symptomatic relief, particularly from profuse nasal discharge.

 Diphenylpyraline hydrochloride 2 mg.

Recommended adult dosage is I tablet four times a day, continued for at least three days. Tablets should be taken at least one hour before or two hours after meals.

Supplied in bottles of 24 and 100 tablets.

Also available:

A-P-CILLIN (100)

FROM ABROAD

With proper precautions, the procedures can be safely performed even in poor-risk patients.

Dr. Eberhard Hasche of the University of Berlin stresses these examinations as aids in the choice of the best surgical approach to the pulmonary lesion. The procedures also facilitate differentiation between inflammatory and neoplastic processes.

Brun's Beitr. klin, Chir. (Munich) 189:169-192, 1954.

Effects of Prenatal Anoxia

Chick embryos subjected to anoxia show a high incidence of cardiac and vascular malformations. Dr. Günther Schellong of the University of Freiburg exposed the eggs to an atmosphere of 3 to 4% oxygen for five hours. The exposures were done at the twenty-fourth, thirty-sixth, forty-eighth, and seventy-second hour after beginning of incubation. During the remaining time, the oxygen content of the atmosphere in the incubator was normal.

Of 163 chicks, 40 had congenital anomalies; 24 had malformations of the heart and great vessels. The most frequent vascular lesions were hypoplasia and stenosis of the aortic arch and absence of pulmonary arteries. Interventricular and interauricular defects were also noted.

On the basis of these experiments, short episodes of anoxia

IN ANXIETY AND TENSION
Sedation
without
hypnosis

IN HYPERTENSION

a safer tranquilizer and antihypertensive

FROM ABROAD

during pregnancy are believed to cause congenital malformations in the human.

Beitr. path. Anat. (Stuttgart) 114:212-243, 1954.

Interstitial Pneumonia

The incidence of interstitial pneumonia is greatest between the third and fourth months of life. Premature and full-term infants are equally affected.

Dr. G.-A. Von Harnack of the University of Hamburg-Eppendorf reports that the incubation period ranges between twenty-two and seventy-eight days, during which time the disease is highly contagious. No effective therapeutic agent

is available, although cortisone may be of value. To avoid anoxia, oxygen therapy is mandatory. Antibiotics are given when superinfection with pyogenic organisms occurs. The mortality rate is high, at times reaching 40%.

Ann. paediat. (Basel) 183:224-240, 1954.

FRANCE

Acute Glomerulonephritis

Treatment of acute diffuse glomerulonephritis in children may require hospitalization and close medical supervision for several months.

Dr. Sorel and associates of the University of Toulouse use a regimen of bed rest, diet, antibiotics,



and diuretics. Cardiac drugs are administered when necessary.

The child is considered cured when urinalysis and kidney function tests, including urea clearance, are normal. Of 61 patients, 23 had persistent albuminuria, microscopic hematuria, cylindruria, and azotemia up to nine months after initiation of therapy; 2 deaths occurred early in the course of the disease.

Arch. franç. pédiat. (Paris) 11:766-768, 1954.

Use of Succinylcholine

Relaxation and increased pliability of the bronchi may be induced by succinylcholine. Dr. R. Benda and associates of Paris report that the method allows visualization and biopsy of areas in the terminal portion of the main bronchi that are usually inaccessible. The action of succinylcholine can be further potentiated by premedication with chlorpromazine.

Presse méd. (Paris) 62:1434, 1954.

Sedimentation Rates

With acute rheumatic fever, the fifteen-minute sedimentation rate of erythrocytes is ordinarily elevated. Drs. A. Josserand and D. Germain of Lyon report that the fifteen-minute sedimentation rates may reach 75% of the value obtained at the end of the first hour. During therapy, early rates decrease, with the reading after the first fifteen minutes ranging from about 20 to 30% of that after one hour. In the recovery period or during remissions, the fifteen-minute sedimentation rate usually amounts to less than 20% of the one-hour value. Lyon méd. (Lyon) 192:321-323, 1954.

Rx INFORMATION

LACE

INDICATIONS: Menopause, prostatic carcinoma, postpartum breast engorgement

COMPOSITION: Each capsule, or 1 cc., contains 12 mg. of TACE (Chlorotrianisene).

SAFETY: TACE produces a minimal incidence of with-drawal bleeding so commonly observed following estrogen therapy of the menopause. In both sexes, TACE is generally well tolerated, thus minimizing such side effects as nausea, vomiting and illuid retention.

DOSAGE: For relief of menopausal symptoms, 2 TACE
Capsules, or 2 cc. TACE Oral
Drops (in cold water), daily for
thirty days, is generally a
course of therapy. In severe
cases when symptoms recur,
additional short courses of
TACE may be required. For
postpartum breast engorgement,
4 TACE Capsules daily for
seven days. For palliative control of prostatic carcinoma, 1
or 2 TACE Capsules daily.

SUPPLIED: In bottles of 70 and 350 capsules: in 30 cc. bottles with calibrated dropper. One bottle of capsules or 2 bottles of oral drops usually suffice for a course of therapy.

References L. Greenblatt, R. B., and Brown, M. H.: Am. J. Obst. & Cym. 63:136; June, 1982. Ausman, D.C. Wisconsin M. J. 53:322, 395. Weechmil, R. B. Obst. & Cym. 3:201, 1984.

The Wm. S. Merrell Company
CINCINNATI

New York • St. Thomas, Ontario

TACE... released like a hormonal secretion for your menopause patient

TACE, by virtue of its storage

in body fat, simulates the hormonal secretion of an endocrine gland by its gradual, even release from this depot. TACE gives smooth, long-lasting control of symptoms... minimal

withdrawal bleeding (1)... and

restoration of the

"sense of belonging". [4



A smoother adjustment to the menopause with a short, simple course of oral treatment.

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ORAL
"FAT-STORED

ESTROGEN"

ANOTHER EXCLUSIVE DEVELOPMENT OF MERRELL RESEARCH

TACE(R)

Merrell Since 1828

BELGIUM

Changes after Oxygen

Retinal edema and hemorrhages may occur after oxygen therapy in emphysematous patients. The phenomena are similar to those observed in the first stages of retrolental fibroplasia in premature infants kept in oxygen incubators.

Drs. J. François, M. Vanderstraeten, and A. Neetens of the University of Ghent could find no abnormalities in the eye grounds of emphysematous individuals before treatment with oxygen. After intensive therapy, however, retinal arteries constricted, veins dilated, and the macular area became edematous. The most pronounced lesions were observed in patients with severe pulmonary emphysema with anoxia. Hemorrhages along retinal veins and multiple capillary extravasations were noted. Changes suggesting papillary edema, however, were not seen.

Ophthalmologica (Basel) 128:73-98, 1954.

ALGERIA

Grafting of Ribs

When bone chips from the tibia are used for spinal fusion, the legs are weakened, disfiguring scars are frequent, and hospitalization is prolonged. In contrast, report Dr. F. Lagrot and associates of Algeria,

news! IMPORTANT PRICE REDUCTION

turadantin TABLET prices reduced 18%

The rapidly expanding routine use of Furadantin in acute and chronic urinary tract infections has enabled us to make an average reduction of 18% in the cost to your patients.

50 and 100 mg. tablets. Furadantin Oral Suspension, 5 mg. per cc. for true economy in urinary tract infections
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in the management of hypertension

The potent autonomic ganglionic blocking action of Methium has now been augmented by the mild hypotensive and sedative properties of reserpine. A true synergistic combination, Methium with Reserpine produces "better hemodynamic stability than when either one is used alone." In one series, more patients obtained adequate blood pressure reduction than from any single drug or combination of drugs previously reported.

Of special significance, a satisfactory response has been achieved with less than half the usual Methium dosage. As a result, "the occurrence and intensity of physiologic side effects were markedly reduced and were minimal and of benign nature."

Because of the potency of Methium, careful use is, nevertheless, required. Precautions are indicated in the presence of renal, cardiac or cerebral arterial insufficiency. Markedly impaired renal function is usually a contraindication.

Supplied: Methium 125 with Reserpine — scored tablets containing 125 mg. of Methium and 0.125 mg. of reserpine. Methium 250 with Reserpine — scored tablets containing 250 mg. of Methium and 0.125 mg. of reserpine.

 Ford, R. V., and Moyer, J. H.: Am. Heart J. 46:754 (Nov.) 1953.

 Crawley, C. J., et al.: New York State J. Med. 54:2205 (Aug. 1) 1954.

Methium[®] with Reserpine

CHLORIDE (BRAND OF HEXAMETHONIUM CHLORIDE)

WARNER-CHILCOTT

MAXIMUM SAFE ANALGESIA

(free from risk of addiction)

in whatever potency each patient may require

By facilitating the optimal analgesic medication of each patient without risk of addiction, PHENAPHEN and PHENAPHEN WITH CODEINE have proven their wide range of clinical usefulness — for cases of simple headache to many of late cancer.

True pharmacodynamic synergism enhances the therapeutic potency of each of the 4 forms available for discriminating prescription:

PHENAPHEN

- basic non-narcotic formula

Each brown and white capsule contains:
Acetylsalicylic acid (2½ gr.)......162 mg.
Phenocetin (3 gr.)........194 mg.
Phenobarbital (¼ gr.)........16.2 mg.
Hyoscyamine sulfate (½eeg gr.)...0.031 mg.

Phenaphen No. 3
PHENAPHEN
with CODEINE PHOSPHATE 1/2 GR.
Each block and green capsule contain

with CODEINE PHOSPHATE 1/2 GR.
Each black and green capsule contains:
The basic phenaphen formula plus
Codeine phosphate (½ gr.)........32.4 mg.

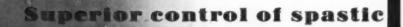
A. H. ROBINS CO., INC. . Richmond 20, Virginia

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Spartic smooth muscle symptoms
Spartic smooth muscle symptoms
Bully controlled with Donnatal



SPASMOGENESIS

The Spasmagenic Impact of stimuli from external environment

Environment



disorders

DONNATAL 'ROBINS' provides the spasmolytic action of natural belladonna alkaloids, in proportions of maximum synergism—reinforced by the mild sedative effect of phenobarbital in low dosage. Clinical experience has demonstrated its superiority over synthetic preparations, and its low incidence of side effects.

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Each Tablet, Capsule, or 5 ce. teaspoonful of Elixir confainer Hyposyamina sulfate ... 0.1037 mg. Atropine sulfate ... 0.1036 mg. Hyposine hydrobromide 0.0065 mg. Phonoborbital (Va gr.). 162 mg.
The formula is also available with phenoborbital Vg gr. in DONNATAL No. 2 tabless.

DONNATAL

2

Prescribed by more physicians than any other antispasmodic

For correction of Chronic Fatigue

DONNATAL PLUS

(Donnotal plus B Vitamina,

The chronic fatigue syndrome, with its accompanying hyperinsulinism, relative hypoglycemia, and catritional deficiencies, is effectively treated by administration of Donnatal Plus.



Each Donnalste Tablet contains:

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2. 31 section of the section of t

and hyperstate 0,83 ms.

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Hyperson bydrobromolds
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Lington
Lington

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to provide opeland neutralization

of hyperocidity

Dibydroxy aluminum

For management of Peptic Ulcer

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(Donnatal with dihydrawy aluminum aminoacetate)

"Full-circle protection" for the lesion from intrinsic and extrinsic attack.

Also available . . . ROBALATE (dihydroxy aluminum aminoacetate, N.N.R.) where antacid action alone is desired.

For relief of Diarrhea

DONNAGEL®

Dermand with Knollin and Pocitis Compound.

Comprehensive therapy, for all seasons.



A. H. ROBINS CO., INC. . Richmond 20, Virginia

Ethical Pharmaceuticals of Merit since 1878

removal of a rib is technically simple and can be done rapidly. Redraping and repositioning of the patient is unnecessary. The rib provides a single, supple, strong graft that can be molded to fit any spinal defect.

Afrique franç. chir. (Algeria) 12:373-375, 1954.

AUSTRIA

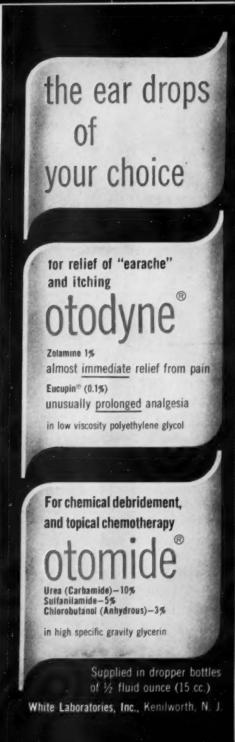
Pancreatic Cancer

Decreased serum diastase levels and a poor reaction to Prostigmin are apparently important features in the differential diagnosis between nonmalignant lesions and carcinoma of the pancreas, states Dr. K. Weithaler of Innsbruck. The administration of Prostigmin to healthy individuals causes a sharp rise in the serum diastase levels, but with carcinoma of the pancreas the response to the drug is greatly decreased. As the cancer spreads the serum amylase curve shows a constant decrease until no response can be obtained.

Krebsarzt (Vienna) 9:310-311, 1954.



"He'll have to eat very light people for a while."





"She was often depressed, dissatisfied and unhappy...

'DEXAMYL' has been of remarkable value for this patient . . ."





patient: "She was often depressed, dissatisfied and unhappy . . . "Menstrual irregularities, osteoarthritic pains, climacteric disorders, plus the general cares of married life have brought about a variety of complaints."

medical treatment: 'Dexamyl', 1 tablet, t.i.d.

response: "'Dexamyl' has been of remarkable value for this patient . . . it reduces the tension . . . relieves her insidious uneasiness."

(This unposed photograph was taken during the patient's interview with her physician, a general practitioner. The case report is in his words.)

To help restore tranquility, optimism and a feeling of well-being to the patient who is ANXIOUS and DEPRESSED:

DEXAMYL*

tablets - elixir - Spansule† capsules

also available: 'Dexamyl' Spansule (No. 1), containing the equivalent of two Tablets; 'Dexamyl' Spansule (No. 2), containing the equivalent of three Tablets.

Smith, Kline & French Laboratories, Philadelphia

*T.M. Reg. U.S. Pat. Off.

Patent Applied For T.M. Reg. U.S. Pat. Off. for S.K.F.'s brand of sustained release capsules

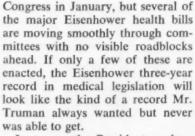
Washington Letter

Health Program To Thrive Under New Congress

PRESIDENT Eisenhower, who regards himself as a moderate in social problems, is well on his way to getting more new federal health laws on the books than did his predecessor, Mr. Truman, who proudly identified himself as a crusader for social reform.

Paradoxically, it is a Democratic Congress now that is making Mr. Eisenhower look good to the man who has trouble paying his doctor and hospital bills. The Democrats are not willingly making a hero of Mr. Eisenhower, but they risk offending the voters if they openly oppose the President's health program.

Actually, nothing of consequence has been enacted since the start of



Last year the President made a running start. Congress, at his urging, passed at least three major health bills, an expansion of the Hill-Burton hospital construction program and of the federal-state vocational rehabilitation program, and a revision of the narcotic prescription laws. A dozen minor bills were enacted in the health fields.

During his first year in the White House, the President hastened through the elevation of the Federal Security Agency into the Department of Health, Education, and Welfare and set up two commissions to study the federal government's role in health and other fields.

Of the President's comprehensive health legislation program for this year, the following major items appear in the most favorable position:

Improvement in the medical care of the indigent. Here the idea is to increase federal appropriations to





impractical patent ...

This combination necktie and watch guard may have been the sine qua non of a Yankee Beau Brummell. To the uninformed, however, it must have seemed that the wearer tucked his tie in his pocket to keep the ends out of his soup! PAT. NO. 79063. June 23, 1868.

patently practical ORBANE®

peristaltic stimulant

selective, persussive, crystalline-put

DORBANE acts specifically on the colon...increases tonus and peristalsis without affecting motility of the small intestine. Its gentle action induces regular, smooth evacuations which promote re-establishment of normal bowel function.

DORBANE is nontoxic, nonhabituating...does not require increased dosage with continued use. It is safe and effective for children, adults and geriatric patients."

DORBANE is equally effective in occasional and chronic constipation. Particularly valuable in pregnancy, it is also extremely useful in constipation resulting from blocking agent therapy (as hexamethonium) used in hypertension and "...can replace other agents...in postoperative anorectal cases."*

Dosage: 1 or 2 tablets before retiring: for children, in proportion. Available: 75 mg. tablets, bottles of 100.

"...Clinical trials on a variety of patients re-emphasize the proven safety and efficacy of this laxative compound."*

> NEW! DORBANE SUSPENSIONorange-flavored liquid, delicious as is, completely disquised in orange juice, 37.5 mg. per teaspoonful. Marks, M. M.: Am. J Digest Dis. 20:240, 1953.



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\$3479 BORDARE IS SCHENLET'S REGISTERED TRADERIAGE FOR & LABSTIFE.

the states for the medical care of welfare patients and, at the same time, to tighten up administrative controls so relief clients everywhere will receive uniform medical care. This will be of direct benefit to several million persons now receiving federal financial aid.

• A medical care program for dependents of military personnel. The dependents would be more closely defined than at present, but those qualifying would receive more medical care, either at military hospitals or outside, with the federal government paying all but a token amount. This was presented to Congress as part of an over-all movement to improve the fringe benefits, particularly for career officers and non-

commissioned personnel. The fact that the services are having trouble keeping high-class career men in uniform is making an impression on Congress and will probably help to effect passage of this bill.

• A health insurance program for the two million or more federal civilian employees. The federal government is asking Congress to [1] authorize payment of \$78 to \$208 per year to each employee's health insurance premiums and [2] permit payroll deductions for the remainder. Outside of Congress, insurance men are wondering which companies will get this business. This bill is almost certain to go through.

• A new program in the mental (Continued on page 74)

Each febiel contains: Pamabrom 50 mg.

Acetophenetidin 100 mg.

Dese: One tablet q.i.d. starting
5 days before expected onset of

menses.

Nomen's Tension Symptoms are Different!

When . . . abdominal bloating, heavy, tender breasts, puffiness of hands, face, legs, headaches, backache, mental depression, and explosive irritability, appear regularly before menstruation . . . consider premenstrual tension. These symptoms are due to an excess fluid accumulation. Because they are not of psychic origin, they do not respond to the usual sedatives and anti-spasmodics.

M-Minus 5 effectively reduces premenstrual excess fluid accumulation, and controls symptoms...in 82% of cases. By reducing the primary stimulus to uterine spasm, M-Minus 5 controls dysmenorrhea. M-Minus 5 is not a hormone, sedative or narcofic, and does not interfere with the normal menstrual cycle.

1. Vainder, M.; Indus. Med. & Surg., 22:183, 1953

M-Minus 5

PREMENSTRUAL DIURETIC AND ANALGESIC for Premenstrual Tension and Dysmenorrhea

WHITTIER LABORATORIES, 919 N. Michigan Ave., Chicago 11, III.



BONAD OXIN'

RESULTS

of this new

COMBINATION

In 50 patients with nausea and vomiting, Weinberg reports 88% good to excellent results.¹

In another series, Bonadoxin abolished vomiting in 40 of 41 gravida, eliminated nausea in 30 of the 41.2

Each Bonadoxin tablet contains:

Meclizine HCl 25 mg. Pyridoxine HCl . . . 50 mg.

Mild cases: One Bonadoxin tablet at bedtime. Severe cases: One at bedtime and on arising. In bottles of 25, prescription only.

 Weinberg, Arthur, and Werner, W. E. E. Bonadoxin, a New Effective Oral Therapy for Hyperemesis Gravidarum, New York Medical College and Rockaway Beach Hospital, 1954, 2. Personal communication.



CHICAGO 11, ILLINOIS

*TRADEMARE

INDIVIDUALIZE
TREATMENT OF
HYPERTENSION

SERPASIL APRESOLINE

SERPASIL® (reserpine CIBA).
SERPASIL® APRESOLINE® hydrochloride (reserpine and hydralazine f drochloride CIBA)
APRESOLINE® hydrochloride (redralazine hydrochloride CIBA).

For initial therapy—in all cases:

SERPASIL, a pure crystalline alkaloid of ranwolfia root-particularly effective in the neurogenic forms of hypertension. Acts centrally—tranquilizes, moderately lowers blood pressure, alows heart rate.

Serpasil'

When combination therapy is indicated:

SERPASIL-APRESOLINE, a combination product offering convenience and economy in the more complicated cases involving both neurogenic and humoral factors.

Serpasil'-Apresoline'

In more retractory cases requiring further individualization of desage:

APRESOLINE acts centrally and peripherally for a marked antihypertensive effect. Increases renal plasma flow-produces vascdilatation-inhibits pressor substances.

Apresoline'

Sorpess Tablets, 0.1 mg., 0.25 mg. and 1.0 mg.

Parenteral Solution (for neuropsychiatric use only),

2.5 mg. per ml., in 2-ml. ampuls.

Elixir, 0.2 mg. per 4-ml. teaspeonful.

Sormesti-Aprecetties Tablets, each containing 0.1 mg. of Serpasti and 25 mg. of Apreceine.

Tablets, each containing 0.2 mg. of Serpasti and 50 mg. of Apreceine.

Aprocettae Tablets, 10 mg., 25 mg., 50 mg. and 100 mg. Ampula, 1 ml., 20 mg. per ml.

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A/mone

SUMMIT, N. J.

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of high clinical value

Essential in practice of modern physical medicine. Pathological and physiological conditions in which use of ultraviolet is most beneficial, include: skin conditions, tuberculosis, secondary anemia, surgery, care of infants and children, pregnant and nursing mothers, and physical fitness.

For 50 years, Hanovia scientists and engineers have made basic contributions to the vast improvement in physical therapy equipment to keep pace with modern science and clinical re-

quirements.

LUXOR ALPINE QUARTZ LAMP

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Delivers complete ultraviolet spectrum required for general therapeutic use, Effective, Economical to operate. Simplified control, Self-lighting quartz tube, Mobile, Provides concentrated source of ultraviolet for local and orificial application. Air cooled, No water system, Automatic full intensity indicator, Operates effectively in every position.

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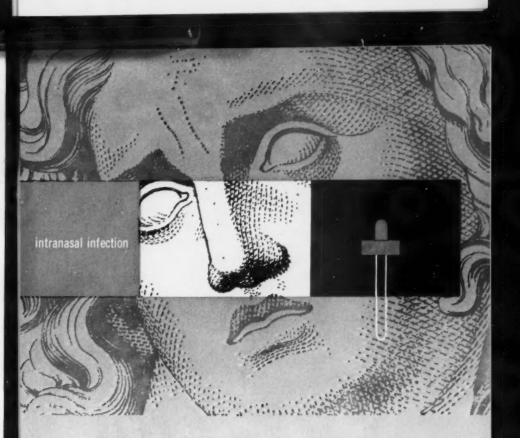
disease field. The federal government would spend more on its own direct research on mental conditions and, at the same time, pass out more money to private investigators and institutions. This has a logical dollars-and-cents appeal that is winning supporters on Capitol Hill: If a higher percentage of mental patients could be restored to society, the savings in federal and state institutional care costs would be fabulous.

The legislation that Mr. Eisenhower and Mrs. Hobby expended so much energy on last yearhealth reinsurance—is, as expected, finding the going rough. Most Democrats do not favor the bill because it doesn't go far enough. Rep. Percy Priest (D., Tenn.), chairman of the House Interstate and Foreign Commerce Committee, who reluctantly voted for the bill last year, said that the legislation would have to be strengthened or it would not pass his committee. On the other hand, the conservatives of both parties thought that last year's bill was already too strong. They can be expected to continue their opposition.

On another controversial bill, designed to streamline federal grants to states for public health work, the President may have more success. Last year this bill passed the House but became mired in technicalities in the Senate Labor and Welfare Committee. Because all of the interests involved favor the principle of the bill, agreement may be reached. With a new Congress, this bill must again have House approval.

Some of the minor Eisenhower proposals that are not political in-

(Continued on page 78)



This nose drop attacks the whole spectrum of bacteria commonly found in intranasal infections

Because 'Drilitol' contains both anti-grampositive gramicidin and anti-gramnegative polymyxin, you can safely combat the whole spectrum of bacteria commonly found in intranasal infections.

And, because 'Drilitol' has an extremely low surface tension (35.0 dynes/cm.), the gramicidin and polymyxin can penetrate deeply into tissue crevices and reach remote areas of infection that might otherwise be inaccessible.

In prescribing, be sure to specify:

DRILITOL* SOLUTION or 'DRILITOL' SPRAYPAK'

Smith, Kline & French Laboratories, Philadelphia 1

*T.M. Reg. U.S. Pat. Off.

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can vascular accidents be avoided

in "many instances" yes... "if adequate amounts of vitamin P and C are provided."1

1. Gale, E. T., and Thewlis, M. W.: Geriatrics 8:80, 1953.

C.V.P. provides the water-soluble bio-flavonoid complex (natural "vitamin P" complex) from citrus, potentiated by ascorbic acid. More readily absorbed than certain insoluble flavonoids (e. g. rutin)

C.V.P. acts to thicken the intercellular cement substance of weakened capillary Walls to . . .

help increase capillary resistance and overcome capillary fragility

check capillary hemorrhage and so act to prevent vascular accidents which commonly occur in

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The capillary protectant qualities of C.V.P. are widely applicable to prevent and treat increased capillary permeability and capillary hemorrhage in diabetes, retinopathies, purpura, threatened and habitual abortion,

radiation injury, etc. C.V.P. is eminently nontoxic.

Each C.V.P. capsule or teaspoonful (5 cc.)

of syrup provides:

Citrus Flavonoid Compound 100 mg.

Ascorbic Acid (vitamin C) 100 mg.

samples (capsules or syrup) and literature from ...

u. s. vitamin corporation

(Arlington - Funk Laboratories, division) 250 East 43rd Street • New York 17, N. Y.



Rupture of intercellular cement results in capillary hemorrhage as may occur in hypertension, diabetes, purpura, etc.

WASHINGTON LETTER

clude bills to help finance construction of hospitals and health centers for prepayment health plans, to tighten up the food and drug laws, to improve control of pollution in water supplies and in air above industrial cities, and to set up a better federal-state program of assistance to crippled children and for maternal and child health.

In presenting his health program to Congress, Mr. Eisenhower took a conventional approach, devoid of the urgent tone that accompanied most of Mr. Truman's messages. First he disavowed socialized medicine in these words: "This program will continue to reject socialized medicine. It will emphasize individual and local responsibility. Under

it the federal government will neither dominate nor direct, but serve as a helpful partner. Within this framework, the program can be broad in scope."

If some of the conservative law-makers were looking for complacency from the President on health matters, they were disappointed. He put his philosophy this way: "Preventable sickness should be prevented; knowledge available to combat disease and disability should be fully used.... Constant advances in medical care are not available to enough of our citizens. Clearly our nation must do more to reduce the impact of accident and disease. Two fundamental problems confront us: first, high and ever-rising costs of

appropriate therapy
whenever you find constipation

associated with

biliary dysfunction



BILE SALTS ... to improve biliary function
MILD LAXATIVES ... to relieve chronic constipation
DIGESTANTS ... to combat dyspeptic distress

In boxes of 20, 40, and 80 tablets; also in bottles of 500 and 1000

Generous trial samples on request

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78 MODERN MEDICINE, March 1, 1955

a new topical therapy with 25 times the antiinflammatory, antipruritic potency of hydrocortisone'



Ointment Lotion



Condition after one week of therapy using Florinef Ointment on the right arm and hydrocartisone ointment. on the left arm.

RESULTS OF TREATMENT WITH FLORINEF2

Diagnosis	Number of patients	Definite benefit	No change	
Severe sunburn	3	3		
Atopic dermatitis	10	10		
Contact dermatitis	7	6	1	
Intertrigo	4	4		
Pruritus vulvae	6	6		
Pruritus ani	4	2	2	
	84	31	3	

Florinef Ointment, 0.1 and 0.2 per cent, is supplied in 5 gram and 20 gram collapsible tubes.

Florinef Lotion, 0.1 and 0.2 per cent, is available in 15 cc. plastic squeeze bottles.

Sternberg, T., Graham, J., and Newcomer, V. D.: Personal communication,
 Robinson, R. C. V.: In press (J.A.M.A.)

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A NAME YOU CAN TRUST

IN RHEUMATIC FEVER and RHEUMATOID ARTHRITIS

Maximum salicylate levels with maximum safety



A-C-K ... TABLETS

safely bring relief to those patients who require massive, sustained dosage of salicylates.

*A-C-K Tablets (G. F. Harvey) combine Aspirin with Vitamin C and Vitamin K in a proven, effective, sodium-free combination which allows therapeutically high blood levels of salicylate with maximum safety.

By furnishing adequate replacement amounts of Vitamin C and Vitamin K in each tablet, A-C-K guards against lowered prothrombin level, hemorrhage, and other toxic manifestations of the salicylates.

Each tablet contains
Acetylsalicylic Acid 323 mg. (5 gr.)
Ascorbic Acid...323 mg. (5 gr.)
Menadion...0.33 mg. (1/200 gr.)
Dosage: 2 tablets every 2 hours,
or as directed by the
physician.

Literature and samples available upon request

(A development of the Wisconsin Alumni Research Foundation)



The G. F. HARVEY CO.
(Home of Saratoga Ointment)

Saratoga Springs, N. Y. Dallas, Texas health services; second, serious gaps and shortages in these services."

FEDERAL GRANT PROGRAM

Now that the regulations are in effect, states are making requests for special grants under the new Hill-Burton hospital-clinic construction program for rehabilitation facilities, chronic disease hospitals, nursing homes, and diagnostic-treatment centers.

In general, the program operates the same way as the original Hill-Burton setup. A state's share of the federal fund is based on its per capita income as well as population, a device used to stimulate construction in low-income states. The state then may establish a state-wide ratio between federal and local contributions, or it may carry the demonstrated-need formula one step further by giving a higher percentage of federal funds to the state's low-income areas.

For individuals and communities interested in sharing in this new federal grant program, several points are important:

• No private profit organization may benefit. Facilities must be owned by the city, state, or county, or by a group "no part of the earnings of which inures, or may lawfully inure, to the benefit of any private shareholder or individual."

• The facility must offer "community service," that is, be willing to receive the public. However, in areas where racial segregation is practiced, the state may make grants to a segregated project, providing each racial group has facilities of "like quality."

• The facility must give assurances that it will furnish "a reasonable

(Continued on page 84)

CAPS

d-Amphetamine - Vitamins and Minerals Lederle

THE WEIGHT ON HIS FEET
PUTS A LOAD ON HIS HEART !

REducing VI tamin CAPS ules

REVICAPS is the unique prescription product which combines d-Amphetamine, methylcellulose, vitamins and minerals as an aid to weight reduction.

REVICAPS suppress appetite.

REVICAPS elevate the mood.

REVICAPS supply the vitamins and minerals needed for balanced nutrition.

Dosage: One or two capsules, ½ to 1 hour before each meal.

Bottles of 100 and 1,000.

Available on Prescription Only

d-Amphetami	ne Sulf	nte		5	mg.
Vitamin A					
Vitamin D	167	U	8.P.	U	nits
Thiamine Mo	nonitra	te	(B ₁)	1	mg.
Riboflavin (B	(2)			1	mg.
Niacinamide			2	0	mg.
Calcium Pant	tothena	te	0.3	4	mg.
Pyridoxine H	CI (Bo)		0.3	14	mg.
Folic Acid			0.3	4	mg.
Vitamin Bis			0.3	14	mg.
Ascorbic Acid	(C)		2	0	mg.

Methylcellulose	200	mg.
Iron (FeSO4 exsiccated)	3.34	mg.
Calcium (CaHPO ₄)	140	mg.
Phosphorus (CaHPO ₄)	108	mg.
Iodine (KI)	0.5	mg.
Fluorine (CaF2)	0.1	mg.
Copper (CuO)	1	mg.
Potassium (K2SO4)	5	mg.
Manganese (MnO ₂)	1	mg.
Zinc (ZnO)	0.5	mg.
Magnesium (MgO)	1	mg.
Boron (Na ₂ B ₄ O ₇)	0.1	mg.



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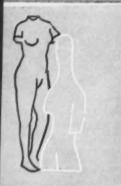
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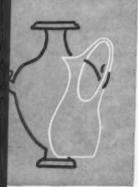
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"an alliance of the classic and contemporary"...





FOR HYPERTENSION



Now you can give your hypertension patients the compound therapeutic advantages of two most successful hypotensive agents:

THEOMINAL

(theobromine and Luminal®)

plus the widely recommended

Rauwolfia serpentina alkaloids.

Also available as before

THEOMINAL (Each tablet contains theobromine 0.32 Gm. and Luminal 32 mg.) and

THEOMINAL (M) (Each tablet contains theobromine 0.32 Gm. and Luminal 15 mg.)



Synergistic Therapy New New

THEOMINAL R.S.

(Theominal with Rauwolfia serpentina)

BETTER CONTROL OF CARDIOVASCULAR AND SUBJECTIVE SYMPTOMS

Theominal R.S. combines the vasodilator and myocardial stimulant actions of theobromine and Luminal with the moderate central hypotensive effect of Rauwolfia serpentina, Gentle sedation calms the patient and a feeling of "relaxed well being" is established. Headache and vertigo disappear as the blood pressure and pulse rate are reduced gradually.

GOOD TOLERANCE

Minor side effects - nasal stuffiness, drowsiness, etc. - may occur in isolated instances. No serious side effects have been reported.

Each Theominal R.S. tablet contains:

- Theobromine 0.32 Gm.
- Luminal 10 mg.
- Purified Rauwolfia serpentina alkaloids (alseroxylon fraction) 1.5 mg.

Dose: One tablet 2 or 3 times daily.

Theominal R. S. is supplied in bottles of 100 and 500 tablets.



amount" of free patient care. Presumably the amount will depend on the financial basis of the operating group. The Surgeon General of U.S. Public Health Service may waive this requirement when the furnishing of free care obviously would not be feasible.

• The facility must qualify under objective criteria established by the state. This means that certain homes or centers will be denied grants because their medical staff or physical plant is unacceptable.

Washington Notes

¶ Rep. John Dingell (D., Mich.), an original sponsor of the Truman-Ewing program for compulsory national health insurance, reintroduced the measure early in the session, expressing the hope that it might receive some consideration. So far the subject has not had serious attention on Capitol Hill.

Influential Sen. Lister Hill (D., Ala.), chairman of the Senate Labor and Welfare Committee, is pushing legislation for federal aid to medical education. This was not one of the original Eisenhower proposals, but it may have the Administration's support before long. While the administration wants to give grants for construction and equipment, it wants to avoid operating grants. Some of the deans insist there is no point in building new and bigger plants unless aid is given for operating expenses.

for the DYSPEPTIC patient AL-CAROID relieves hyperacidity and aids protein digestion

Ordinary antacids inactivate pepsin and thus stop protein digestion, but an **in vivo** study by Tainter* proves that AL-CAROID, by virtue of its Caroid® content, aids protein digestion while relieving hyperacidity.



Powder or Tablet Samples Available

AMERICAN FERMENT CO., INC. 1450 Broadway, New York 18, N.Y.

*Tainter, M. L., et al: Papain, Ann. New York Acad. Sc. 54:143-296 (May) 1951.

AL-CAROID®

antacid-digestant

When infection complicates the picture



Exclusive

Terra-Cortril

topical ointment a clear-cut therapeutic answer

also available:
Certril Topical
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Certril Acetate
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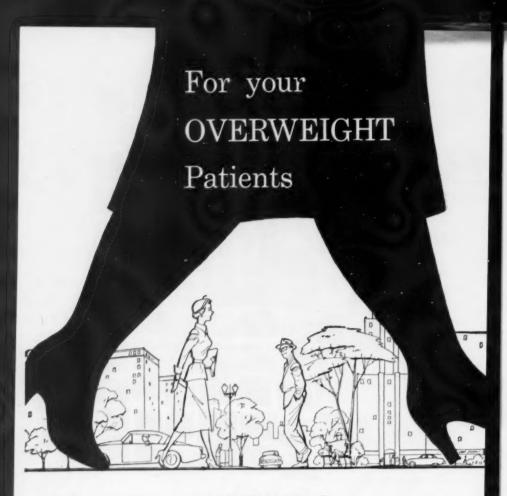
provides coordinated anti-infective, anti-inflammatory action quickly resolving inflammatory conditions in which infection is actual, suspected, or anticipated. supplied: in ½-ounce tubes, containing 3% Terramycin® (oxytetracycline hydrochloride) and 1% Cortril® (hydro-

*brand of oxytetracycline and hydrocortisons

Pfizer

PFIZER LABORATORIES, Brooklyn 6, New York Division, Chas. Pfizer & Co., Inc.

cortisone, free alcohol) in an easily applied ointment base.



Recommend RY-KRISP

as bread in reducing diets

Low-Calorie . . .

Whole-Grain . . . Delicious!

Only 20 calories per doublesquare wafer. Made of wholegrain rye, salt and water.





In such cases a truly effective soporific is needed.

At the annual meeting of the *British Medical Association* in 1954, Prof. D. M. Dunlop* of Edinburgh said that "chloral hydrate is a much neglected but efficient hypnotic for sick patients."

Bromidia provides an 8 hour span of sound sleep because it combines the quick action of chloral hydrate with the prolonged effect of potassium bromide and the therapeutic adjuvant, ext. hyoscyamus. The composition per fluid ounce is chloral hydrate 91 gr., potassium bromide 91 gr. and ext. hyoscyamus 1 gr.

The effective dose of Bromidia for relief of *insomnia* is 1 to 2 teaspoonfuls on retiring. In cases of *nervousness*, the sedative dose is 1/2 to 1 teaspoonful repeated up to three times daily. Maximum dosage 3 teaspoonfuls per diem.

Bromidia is available on prescription in 4 fld. oz. or 1 pint bottles.



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Please send me professional literature and sample of BROMIDIA.

Announcing...

the first real advance in

mood-ameliorating drugs since 1939:



ORAL WYAMINE° SULFATE

Mephentermine sulfate, Wyeth



An important new agent to combat mild mental depression.

In marked contrast to other central stimulants—which must be combined with antagonistic sedatives to avoid irritability—Oral Wyamine Sulfate elevates the mood without disturbing the patient or causing nervousness.

In the therapeutic dosage range, WYAMINE does not produce excitation, post-therapy mood deterioration, or anorexia. Dosage is easily adjusted to the needs of the individual patient. Has no adverse effect on blood pressure.

Scored tablets of 25 mg.; delightfully palatable elixir, 25 mg. per 5-cc. teaspoonful.

mood amelioration without excitation



Philadelphia 2, Pa.

MODERN & MEDICINE

THE JOURNAL OF DIAGNOSIS AND TREATMENT

THE EDITOR'S PAGE

by WALTER C. ALVAREZ, Editor-in-Chief

The Painful Thoracic Wall

When in my college days I used to run on the track, I would sometimes have a distressing pain near the tip of the tenth rib on the right side. Sometimes an area of skin, 6 or 8 in, in diameter and centered over the painful spot, would become red, indicating some inflammation beneath.

For years I sought an explanation of this well-known "side-ache of runners" and finally found it in a little book written long ago by the great British surgeon, Sir Frederick Treves. He said that the pain was due to arthritis of two little joints, one between the tenth rib and its movable tip and the other between this tip and the ninth rib just above. I am sure Treves was right, and I am all the more sure because many times I have had a similar pain in the joint between the manubrium of my sternum and the xiphoid process.

Also, because of my lifelong tendency to fibrositis, I have suffered frequently from pain and soreness in either a short section of a rib or its cartilage. Sometimes the soreness over the xiphoid process is so great that I can hardly stand any pressure over the area. During my many years as a gastroenterologist, I have seen scores of persons with this pain of the xiphoid process who had been told that they had peptic ulcers. The physician who made this diagnosis would have known he was wrong if only he had put a little pressure on the xiphoid process. Then he would have seen that the source of the pain was in the abdominal wall.

A large number of the patients I see every month with supposed angina pectoris—pain which is not at all influenced by walking—have only painful thoracic walls. Also a few of the

women I see who fear they have carcinoma of the breast really have only some soreness of a section of a rib back of the breast. Usually one can find that the woman is subject to arthritis or fibrositis. She may have had cricks in her back or neck, perhaps an attack of lumbago or spells of backache and sciatica, or maybe pain and stiffness in some of the joints of the extremities.

The diagnosis can usually be made in a minute with great certainty; all one has to do is to show that the pain is felt in a spot on the body or an extremity which is sensitive to pressure.

Rare Relapse after Penicillin Treatment

Many physicians wonder why in rare cases, after successful treatment with penicillin, a relapse of infection occurs in spite of the fact that the bacteria involved, when tested in vitro, are still quickly killed by the drug. Drs. Carl Berntsen and Ralph Tompsett of New York City recently reported that the explanation appears to be that while bacteria in newly planted and rapidly growing cultures are very susceptible, bacteria in old cultures are not so sensitive.

Experiments on mice failed to show that an abscess artificially produced in the thigh muscles materially altered the relative insusceptibility to penicillin of a bacterial population exceeding 12 hours in age. Increases in the size of the bacterial population of constant age did not change the susceptibility to penicillin. Evidently, conditions in the test tube and the tissues are not always the same.

The Old Herb Doctor's Pouch

A half century ago most of the remedies physicans were using had been extracted from plants, herbs, roots, and leaves. Many of the plants had been found in the medicine pouch of some old herb doctor or some savage medicine man. Then came the era of synthetic drugs, and for a time it looked as if the herb sources had been eliminated. But now the coming of drugs derived from *Rauwolfia* shows that the herbs are not worked out. The other day a strong drug which affects arteries was found in cohoba, a snuff that is used by West Indian witch doctors.

Doubtless, drug houses will now be stimulated to make more studies of the medicinal plants of primitive peoples.

Nasogastric Tube Feeding Technic and Powder

MORTON D. PAREIRA, M.D., EMMETT J. CONRAD, M.D., WILBUR HICKS, M.D., AND ROBERT ELMAN, M.D.

Homer G. Phillips Hospital and Washington University, St. Louis

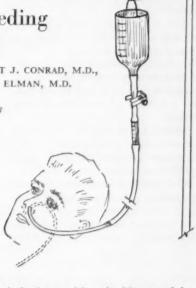
Several disadvantages of nasogastric feeding are eliminated by a soft, flexible polyvinyl tube and a powdered formula to supply calories, protein, vitamins, and minerals.*

POLYVINYL tubing is superior to polyethylene for nasogastric feedings. The same tube may be left in place for as long as four months without irritation of surrounding tissues, and injections may be continued for nine months.

A No. 13 clear, transflex tube with outer width of 2.5 mm. is preferred. Intermittent injections are given with a 50-cc. syringe through a 15-gauge needle with shaft fitting the lumen.

Continuous drip is supplied from an open-type flask. The needle hub is joined to an adapter at the distal end of a rubber tube, and flow is regulated with a glass drip meter and pinch clamp (see illustration).

The powder consists of whole milk, nonfat milk solids, calcium caseinate, dextrose, Dextri-Maltose, vitamins, choline, and iron. The daily ration is 900 gm. and contains 3,500 calories, including 210 gm. of protein and 600 gm. of car-



bohydrate with only 30 gm. of fat. The daily portion is suspended in 1.5 to 2.4 liters of water with a blender, eggbeater, or spoon. The fluid is refrigerated and shaken well before use.

Not more than 7% of patients have alimentary upsets, and feedings must be discontinued for only 2%. Diarrhea may be infrequent because of the low-fat content. Gastrointestinal disturbances may also be reduced because the preparation used in suspension is a dry powder and the protein component is insoluble. Meticulous daily cleansing of glassware prevents bacterial contamination.

Tube feedings may be instituted for the following conditions:

• Primary malnutrition without organic cause

^{*}Therapeutic nutrition with tube feeding, J.A.M.A. 156:810-816, 1954.

- Anorexia from acute or chronic disease
- Malnutrition after convalescence perpetuated by anorexia after the original source is removed
- Mechanical impediments—maxillofacial surgery, interdental wiring, lesions of pharynx and esophagus, and paralysis of swallowing muscles
- · Sensorial depression
- Preoperative malnutrition
- Postoperative malnutrition
- Terminal cancer
- Undernourishment, even though the patient can eat normally, when rapid rehabilitation is desired.

Early short courses of intubation may prevent malnourishment. After interdental wiring, for example, if the suspension is prepared at home and the noon meal kept in a thermos bottle, jobs can be resumed almost immediately, in contrast to frequent invalidism with usual liquids.

Depleted hemoglobin and serum albumin rise when feedings are continued two weeks or more. For patients in terminal stages of cancer, narcotics can be reduced; many patients with incurable malignant disease are able to return home and remain ambulatory practically to the time of death.

Tube feeding was satisfactory in more than 320 cases for a total of nearly 7,000 days.

Cholesterosis of the Gallbladder

MAURICE FELDMAN, M.D., AND MAURICE FELDMAN, JR., M.D., SINAI HOSPITAL, BALTIMORE, report that cholesterosis of the gallbladder is noninflammatory and is probably caused by a localized disturbance of cholesterol absorption. The disease is manifested by intramural deposition of lipoid.

Most patients are over 40 years of age. The greatest incidence is among individuals in the fifth and sixth decades. The plasma cholesterol level has little significance with cholesterosis of the gallbladder, but the cholesterol content of the bile is usually increased. Roentgenologic examination seldom reveals alterations. Unusual shadows are generally produced by associated cholecystitis or gallstones. Also, narrowing of the neck of the gallbladder because of thickening of the mucous membrane may present a partial obstruction to the flow of bile.

Coexistence of cholecystitis or gallstones was uncommon in postmortem studies of 165 instances of cholesterosis. The incidence of gallstones with cholesterosis is considerably higher in surgical patients.

Association of polyps and adenoma of the gallbladder with cholesterosis is rare. The disease is not related to diabetes mellitus. Malignancy is seldom a factor.

Cholesterosis of the gallbladder. Gastroenterology 27:641-648, 1954.

Surgery for Coronary Artery Disease

CLAUDE S. BECK, M.D., AND DAVID S. LEIGHNINGER, M.D. Western Reserve University, Cleveland

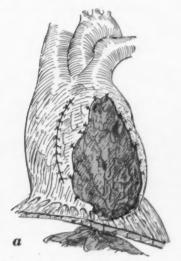
Operation can provide adequate changes in coronary blood flow to reduce the incidence of death from coronary insufficiency.*

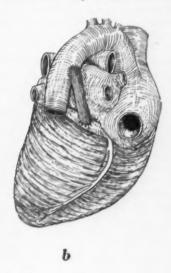
A FTER operation for coronary artery disease, 4 out of 5 patients can return to work with or without limitations and have no pain or less discomfort than was experienced before surgery.

The most suitable patient for coronary artery surgery is lean, from 40 to 60 years of age, has had pain for a year or more, and is ambulatory. No age limit has been set for operation, but young persons are apt to have rapidly progressive disease; surgery does not stop the occlusive process.

Patients eligible for operation are susceptible to mechanism disruption rather than muscle death. Mechanism death occurs when the coordinated beat is destroyed but the heart is capable of continued function. With muscle death, the myocardium gives way, the heart enlarges, and failure occurs. Operation cannot restore degenerated myocardium. However, patients with moderate enlargement or status anginosus are accepted for surgery.

Since coronary occlusion stim-





Operations for coronary artery disease, J.A.M.A. 156:1226-1233, 1954.

ulates development of intercoronary collateral circulation, operation is delayed for six months after infarction. The heart is able to maintain function on a small fraction of normal total inflow if a functional system of intercoronary arterial channels distributes blood evenly.

After experimental evaluation, 2 operations have been utilized for persons with coronary disease. In operation I, the epicardium and lining of parietal pericardium are abraded and 0.2 gm. of powdered asbestos is applied to the surface. The coronary sinus is partially occluded at the entrance to the right auricle, and the parietal pericardium and mediastinal fat are grafted to the heart surface (Fig. a).

In operation II, a vein graft is

placed between the aorta and coronary sinus to shunt in arterial blood (Fig. b). About two or three weeks later, the coronary sinus is partially occluded so that the pressure of blood in the sinus increases and produces retrograde flow.

Operation I is currently being used. The other method reduces mortality and size of the infarct to a greater extent but requires special training and 2 operations. Also, in experiments on dogs, the graft between the aorta and coronary sinus loses contact with the capillary bed in two months. If contact is lost in human beings, blood cannot be delivered from outside sources for long periods of time, and protection is dependent upon intercoronary channels.

Method of Cardiac Massage

L. NERI, F.R.C.S., AND D. LANG STEVENSON, F.R.C.S.E., WHIPPS CROSS HOSPITAL, LONDON, describe a safe and simple technic for cardiac massage. With the procedure, the heart can be easily grasped and massaged within ten seconds from the time the skin incision is made.

If the upper abdomen is not already open, a midline incision is made through the linea alba. The xiphoid process is then split up the middle to produce an opening in the peritoneum and retroperitoneal fascia attached to the posterior surface of the xiphoid. The tip of the right index finger is inserted into this opening and, maintaining close contact with the back of the sternum, is pushed upward and slightly to the left. The finger traces the fascial plane up to a level above the diaphragm. The finger is then moved forcibly to the left, opening the left pleura and sweeping off the muscular slips of the diaphragm from the ribs so that the entire hand can be introduced into the chest. The incision is closed with 3 or 4 interrupted sutures, attaching the peritoneum to the costal margin.

Since this method involves almost avascular areas and follows natural fascial planes, trauma is avoided.

Cardiac massage. Lancet 267:1207-1208, 1954,

Cervical and Mediastinal Node Biopsy

DWIGHT E. HARKEN, M.D., HARRISON BLACK, M.D., AND ROY CLAUSS, M.D.

Peter Bent Brigham Hospital, Boston

ROBERT E. FARRAND, M.D.

Henry Heywood Hospital, Gardner, Mass.

Exploration of the superior mediastinum is a valuable addition to scalene node biopsy for diagnosis of intrathoracic disease.*

Diagnosis of intrathoracic disease can often be established by cervicomediastinal node biopsy. Metastases are often demonstrated when enlargement of lymph nodes is not evident on physical examination. The operability of suspected or proved lung carcinoma can also be determined.

Tissue for biopsy is generally obtained in conjunction with diagnostic bronchoscopic study. Procaine is infiltrated into the skin. After the patient is positioned and the skin incision is made as for exposure of the phrenic nerve, the fat pad over the scalenus anticus with contained lymph nodes is removed. The external jugular vein may be sacrificed if necessary for visualization of the scalene muscle and phrenic nerve.

The sternocleidomastoid muscle is retracted medially and the upper mediastinum is entered by blunt dissection through the cervical fascia. The finger is inserted medially,



Laryngoscope used as lighted retractor to expose upper mediastinal lymph nodes

dorsally, and caudally either anterior or posterior to the subclavian artery, and the trachea is identified. The mediastinal pleura is pushed laterally to expose the paratracheal lymphatic chain.

Approach from the left side allows palpation of the aorta. On the other side, the right main bronchus may be reached. Enlarged lymph nodes are enucleated with the finger. When a mass or nodes are fixed, tissue may be obtained under direct vision by introducing a Jackson laryngoscope or lighted retractor. Pulsating masses can be explored with a needle. The carotid sheath and retrosternal areas are examined if diseased tissue is not found in the mediastinum.

Investigation must be bilateral for

 A simple cervicomediastinal exploration for tissue diagnosis of intrathoracic disease. New England J. Med. 251:1041-1044, 1954. lesions of the lower left lung area because disease may spread to the carinal nodes and the right paratracheal chain. Only one side is explored when the lesion is on the right or in the left upper lobe.

Complications rarely occur. In 300 operations, injury to the subclavian or internal jugular veins caused hemorrhage in 2 instances but bleeding was easily controlled with Gelfoam. Pneumothorax was produced in 2 patients, but catheter aspiration through the operative site expanded the lungs.

A positive histologic diagnosis was made in 45 of 142 patients by cervicomediastinal biopsy. Of 78 persons with bronchogenic carcinoma, 31 had metastases to the cervical or upper mediastinal nodes.

Of the positive diagnoses, approximately half were based on tissue from the superior mediastinum and scalene biopsy alone would not have been helpful. However, when nodes are palpable, mediastinal exploration is not necessary.

When lung cancer has extended to the superior mediastinum or the lower cervical region, radical surgery is probably not advisable. Survival rates do not justify the risks of operative complications and mortality.

Palliative resection should be reserved for patients with hemorrhage or infection. When cervicomediastinal metastasis and other signs of inoperability are not evident, radical excision with block dissection of the lymphatics is done.

Gastritis after Surgery for Ulcer

RUDOLF SCHINDLER, M.D., AND ANGELO E. DA GRADI, M.D., LOS ANGELES, report that gastroscopic observations after operations for gastroduodenal ulcer may reveal gastritis even though the patient has no symptoms.

To determine the incidence of gastritis after various surgical procedures, patients were divided into 2 groups: [1] 334 persons in whom gastroenterostomy or gastric resection was done and [2] 34 instances in which vagotomy alone or in conjunction with other procedures was performed.

In the first group, ulcers were observed in 12.9% of patients. Gastritis was seen in 71.5% and was severe in nearly 40%. In the second group, no ulcers were observed. Gastritis was seen in 64.3% of patients in whom vagotomy was combined with gastroenterostomy or resection. The disorder did not occur in any of 20 patients in whom the pylorus was preserved and no artificial stoma existed.

Billroth I resection was performed in only 2 patients, both of whom had severe gastritis. In 4 patients with gastroenterostomy, severe gastritis disappeared after pyloroplasty was substituted.

Gastroscopic observations following various types of surgery for gastroduodenal ulcer. Surg., Gynec. & Obst. 100:78-82, 1955.

Postphlebitic Varicose Vein Surgery

THOMAS T. MYERS, M.D., AND JACK C. COOLEY, M.D. Mayo Clinic and Foundation, Rochester, Minn.

Chronic insufficiency of deep leg veins may be successfully treated by extensive stripping of incompetent superficial varices.*

ALTHOUGH neglected superficial veins of the legs can produce stasis changes, in many instances both deep and superficial systems are incompetent. In such cases, surgery and adequate elastic support are recommended.

After questioning the patient regarding previous thrombophlebitis or possible injury to the vein, a thorough physical examination is done. Areas of stasis change are studied. Edema and cyanosis are common signs of deep vein involvement.

Superficial veins are often large, near the skin, and clearly visible but may be obscured deep in fatty subcutaneous tissue. These veins are detected by compression or palpation.

The compression method is used to [1] trace the exact course of the vein and [2] measure the size of the vessel. The test is done for the greater saphenous vein by compression at knee level and circling the leg with the hand, the finger tips on the vein. The finger tips of the other hand are used to receive the bal-

lottement impact, either above in the thigh or below in the leg. Transmission of an impulse in a vein is considered indicative of incompetency, but confirmation is obtained with the Trendelenburg tourniquet tests. Perforating veins are most efficiently located by palpating the opening through the fascia where the vein emerges.

After the diagnosis of chronic deep vein insufficiency has been established and incompetent superficial veins have been located, the possible benefits of surgery must be evaluated. Incompetent superficial veins apparently contribute to stasis and should be eradicated surgically. When the risk of operation is great, however, elastic support may be sufficient.

Advanced stasis changes are treated before operation. Inflammation, cellulitis, and severe congestion around the incision site are eliminated. Bed rest with the involved extremity elevated above the heart is recommended. Moist packs are placed over areas of ulceration. For large ulcers, skin grafting may save time.

At operation, a skin incision is made just below and parallel to the inguinal crease, and the greater saphenous vein is isolated. All of the tributaries of the saphenous

^{*}Varicose vein surgery in the management of the postphiebitic limb. Surg., Gynec. & Obst. 99:733-744, 1954.

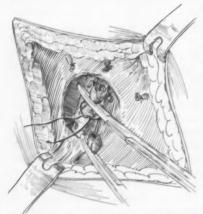


Fig. 1. Division and ligation of greater saphenous vein

vein in this region are dissected, severed, and ligated. The greater saphenous vein is tied and divided flush at the junction with the common femoral vein (Fig. 1).

Accessory incisions are made below the knee, on the dorsum of the foot, and over incompetent perforating veins, and a flexible intraluminal stripper is passed up the greater saphenous vein from the dorsum of the foot to the groin (Fig. 2). The vein is secured to the stripper and is removed by pulling the stripper up through the leg and thigh.

The same type of operation is done when the lesser saphenous vein is incompetent. The incision is made ½ to ¾ in. above and parallel to the knee fold. The popliteal fascia is split longitudinally and the lesser saphenous vein is isolated and severed. The proximal stump is tied flush at the juncture with the popliteal vein. The vein stripper is passed downward to the lateral side of the ankle and the lesser saphenous vein is stripped. All perforating veins are ligated individually below the deep fascia of the leg.

After surgery, elastic tape is used for direct pressure over wound dressings and the entire extremity is supported by 2 or 3 elastic bandages. The patient is put to bed, and the legs are elevated above the heart level.

Ambulation is begun the next morning. The regimen consists of walking for three to five minutes each waking hour alternated with elevation of the legs. Patients remain in the hospital four or five days. The sutures in the groin are removed after about seven days, and leg sutures, in ten days.

On dismissal from the hospital, the patient is instructed to wear the elastic bandages to the knee whenever standing or walking for the first two months after operation. After two months, the patient may accommodate the wearing of bandages to the amount of edema.



Fig 2. Stripper is passed from the ankle up the greater saphenous vein to the groin.

Treatment of Intraoral Cancer

GRANT E. WARD, M.D., AND ROBERT G. CHAMBERS, M.D. Baltimore

Except for some early lesions, radical surgery offers the best chance for cure of malignant tumors within the oral cavity.*

Some etiologic factors in the development of intraoral cancer, such as trauma and tobacco, are still somewhat controversial, but the relationship of leukoplakia to cancer is well known. Ulcerated, thickened leukoplakia and the ulcers of tuberculosis and tertiary syphilis are the most prominent lesions to be distinguished from cancer.

Squamous-cell carcinoma is the commonest malignant tumor in the mouth. Adenocarcinoma may arise from the glands, and sarcoma may originate from aberrant mixed tumors of salivary tissue.

Radical surgery of intraoral cancer should aim at [1] extirpation of the primary lesion and pathways of lymphatic spread and [2] functional and cosmetic rehabilitation of the patient.

Carcinoma of the tongue and cancer of the floor of the mouth are similar in development, treatment, and prognosis. Some anterior tongue cancers, less than 2.5 cm. in diameter, are treated satisfactorily by wide local excision or with use of an intraoral roentgen-ray cone. Carefully selected small anterior le-

sions of the tongue and mouth floor are adequately eradicated with radon seeds and radium needles. Radionecrosis of the mandible is always a possible complication in such cases. Irradiation or simple hemiglossectomy may be utilized in elderly or debilitated individuals.

Since about one-fourth of carcinomas first seen without palpable lymph nodes eventually metastasize to the neck, combined hemiglossectomy and radical neck dissection is usually employed, either as a composite en bloc procedure or as a pull-through operation. In the latter procedure, the floor of the mouth can be closed primarily or a graft used.

However, when the composite technic is used, some type of skin grafting, such as delayed doublepedicle apron flap, is usually necessary.

Mandibular alignment is maintained by bridging the gap with stainless-steel bars, by external fixation, or by insertion of a guideplane dental prosthesis. A tracheostomy is done before the main procedure.

The operative mortality rate is about 11%, and the recurrence rate is approximately twice as high.

Carcinomas of the buccal mucosa and lower gingiva are also similar in development and therapy. Cheek le-

^{*}Management of intraoral cancer. Am. Surgeon 20:1297-1304, 1954.

sions occur most frequently opposite the occlusive level of the teeth. Posterior buccal lesions quickly involve surrounding structures, and prognosis is poor, regardless of the type of treatment.

Small and moderate-sized buccal tumors are treated with irradiation: persistent or recurrent lesions should be widely removed with electrosurgery. Radical excision is necessary for extensive lesions. The entire cheek, involved adjacent muscle or bone, and attached skin must be resected, as necessary.

Approximately 40% of cheek carcinomas metastasize after adequate local treatment. Therefore, radical neck dissection combined with en bloc excision of the local tumor is done when the skin is involved. The five-year survival rate

ranges from 9 to 40%.

Carcinomas of the palate and upper gingiva are similar. Squamouscell carcinoma is the most common malignant tumor of the palate, with adenocarcinoma of mixed-tumor type next in frequency. Occasionally, sarcomas and melanomas are seen on the hard palate and upper gingiva.

Squamous-cell cancers of the gingiva and hard palate are initially heavily irradiated and then widely excised in four to six weeks. Radioresistant mixed adenocarcinomas are removed by surgery; radium tubes should be applied when complete removal is uncertain.

Upper gingival lesions involve bone early, and, if roentgenograms show maxillary invasion, a radical extraoral operation through a modified Ferguson incision is performed. The entire area of involved jaw is removed, and, occasionally, removal of the pasoantral wall and palate or orbital exenteration is necessary. A dental prosthetic appliance is used to cover the defects.

Lesions of the hard palate are treated with radium in a leaded. resinous applicator. Small lower gingival lesions are first treated with irradiation or radium and then widely excised in about four to six weeks.

Tumors of the soft palate are very rare and are usually radiosensitive squamous-cell carcinomas. Sarcomas are widely excised, and the defect is bridged by a pedicle flap of mucosa and a denture.

9 SYMPTOMS OF THE DUMPING SYNDROME in gastrectomized patients apparently result from rapid drop in blood volume with subsequent stimulation of pressoreceptors induced by differences in osmolarity between ingested food and plasma. When patients are given hypertonic glucose or hypotonic starch solutions intrajejunally, Kathleen E. Roberts, M.D., and associates of New York City find that plasma water is withdrawn into the intestinal lumen and electrocardiographic changes occur. These alterations are not observed in persons with intact stomachs who are given equivalent amounts of hypertonic solution.

Ann. Surg. 140:631-640, 1954.

Transverse Low Abdominal Incision

L. S. CHERNEY, M.D.

University of California, San Francisco

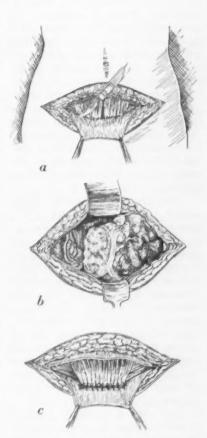
A low transverse incision in the abdomen with release of the rectus muscles from the pubis affords advantages in all stages of operation.*

TECHNIC for a transverse low abdominal incision with rectus detachment is simple, and exposure is superior to that provided by a vertical cut. The wound is strong and cosmetically pleasing, and the incision causes the least possible postoperative discomfort.

The incision is started slightly below and medial to the anterior superior iliac spine, inclined down slightly, carried nearly straight across within the pubic hairline, and terminated below the opposite iliac spine.

The anterior part of the rectus sheath is incised along the same plane, and, if the internal oblique muscle is encountered medially, the fibers are bluntly divided. The lower rectus sheath flap is separated from the underlying rectus muscles down to the pubis by gauze-finger dissection.

The midline fibrous septum between the recti is then divided with scissors, and the pyramidalis muscles are detached from the rectus muscles. Fibrous attachments of the recti are cut at the insertion into



Operative technic: elevation of the rectus sheath and division of recti from the pubis (a), the resulting exposure (b), and suturing of the recti to the lower flap of the rectus sheath at closure (c).

*Transverse low abdominal incision with detachment of the recti from the pubis. J.A.M.A. 157:23-26, 1955.

the pubis, and the muscles are reflected cephalad. Inferior epigastric arteries may be dissected and retracted or ligated and divided.

The transversalis fascia and the peritoneum are opened in the lateral third of the incision, and, after ascertaining the bladder height, the peritoneum is divided about a fingerbreadth above. The possibility of a patent urachus must be considered during the midline dissection of this structure.

If only half the incision is necessary, the cut in the rectus sheath is extended slightly past the midline and only one rectus is detached from the pubis. The incision may be continued into the flank for surgery of the descending colon or kidney.

Time required to develop the incision is compensated for during the intraabdominal procedure.

For closure, the peritoneum and transversalis fascia are sutured, but the pyramidalis muscles are allowed to lie on the peritoneum without stitching. The ends of the rectus tendons are attached to the deep aspect of the lower rectus sheath flap but not to the pubis, so that undue tension can be avoided. The ends of the recti should be made as broad as possible, because the only possible site of postoperative hernia is lateral to the rectus.

The central rectus sheath and component lateral aponeuroses are closed. Muscle fibers of the internal obliques must not be interposed between the edges of the external oblique aponeurosis. Fascia and skin are closed.

The surgical field is 11/2 to 2

times larger with a transverse low abdominal cut than with a vertical incision, and the center of the incision, rather than a narrowing end, is over the operative area. All the pelvic organs are accessible.

The postoperative strength of the abdominal wall is good because no muscle is denervated, the muscle aponeuroses are divided at different levels, only tendinous structures are sutured, and the direction of the incision is parallel to the pull of the oblique abdominal muscles. The recti are segmented and become adherent to the sheath by the entire anterior surface rather than by the cut ends, so the entire pull is not exerted on the reattachment.

Since the incision is below the level supplied by the eleventh thoracic segment of the cord, spinal anesthesia need not extend high and severe blood pressure depression is prevented. Little muscle relaxation is necessary except during rectus muscle reattachment. Extensive intestinal packing is not required, so danger of shock and distention is decreased. General anesthesia, when used, may be light.

The lower abdomen is not used much in respiration. Since motion and coughing are also relatively painless, incidence of pulmonary complications is reduced. Postoperative urinary retention is approximately a third less frequent than when a vertical incision is utilized. No adhesive strapping is needed above the iliac crests.

The pubic hair covers much of the scar, and the remainder will gradually blend with the natural skin lines.

Evolution of Alcoholic Cirrhosis

HYMAN J. ZIMMERMAN, M.D. University of Illinois, Chicago

Definition of the stages of alcoholic cirrhosis facilitates correlation of clinical, histologic, and biochemical aspects.*

The earliest stage of hepatic disease in the alcoholic patient is simple steatosis. This frequently precedes a more severe form of histologic change known as steatocirrhosis. A variety of steatocirrhosis, steatonecrosis, causes necrobiosis of hepatic cells or areas of necrosis in addition to fatty metamorphosis and fibrosis. In some patients, the fat apparently disappears completely and Laennec's cirrhosis ensues.

Simple steatosis—Slight or moderate fatty metamorphosis may be the only hepatic change during the lifetime of an alcoholic patient. No necrobiosis or necrosis occurs in this phase and only slight inflammatory infiltrate. Hepatic function may be intact or the sulfobromophthalein excretion may be slightly impaired. Thymol turbidity and cephalin flocculation are usually normal. The serum albumin level may be slightly depressed, the serum globulin level slightly elevated. Hyperbilirubinemia is rare.

Clinical evidence of disease is slight. The patient is usually admitted to the hospital because of delirium tremens, alcoholic gastritis, or unrelated disturbances. Hepatomegaly is often observed, but spider angiomas are rare. Abdominal venous patterns, splenomegaly, and significant muscular wasting are seldom seen. Prognosis is good.

Steatocirrhosis—Fatty metamorphosis is prominent with this phase of the disease. Fibrosis and architectural distortion, however, are less pronounced. The sulfobromophthalein excretion almost always demonstrates impaired hepatic function.

Irregularities may be noted in thymol turbidity and cephalin floc-culation. Elevation of the serum globulin and depression of the serum albumin are usual. Slight hyperbilirubinemia may occur with levels up to 3 mg. per 100 cc. of serum.

Symptoms are variable and include digestive complaints, fatigability, weight loss, and wasting of the shoulder girdle muscles. Libido and potency are frequently diminished.

Hepatomegaly invariably occurs, spider nevi are frequent, and gastro-intestinal bleeding may be noted. The degree of ascites is related to the extent of fibrosis. Jaundice and acute hepatic coma reflect coagulation necrosis of hepatic parenchymal cells.

^{*}The evolution of alcoholic cirrhosis. M. Clin. North America 39:241-259, 1955.

Prognosis depends on the relative degree of fatty metamorphosis and is usually good. However, acute hepatic decompensation or massive gastrointestinal bleeding may cause death.

Steatonecrosis—Severe fatty metamorphosis with cellular fragmentation and necrosis is usually seen after prolonged, continuous, severe alcholism and impaired nutrition. Patients are usually young, appear well nourished, and may be obese. Acute hepatic failure, severe jaundice, and fetor hepaticus are common. Moderate ascites may occur rapidly. Spider nevi are prominent. Wasting is confined to shoulder girdle muscles.

Hyperbilirubinemia, hypoalbuminemia, and hyperglobulinemia are revealed in laboratory data. Thymol turbidity and cephalin flocculation are abnormal and the gamma globulin level is usually elevated.

Patients often die in hepatic

coma, precipitated at times by gastrointestinal hemorrhage. However, if the patient survives the acute phase, an appropriate diet and other supportive measures may restore adequate liver function.

Cirrhosis—Little or no fatty metamorphosis is noted during this stage. Architectural distortion is signified by cell clumps and microscopic nodules separated by strands of fibrous tissue. Multiplication of small bile ducts is frequently noted. Portal hypertension and spider nevi are common but jaundice does not often occur. Occasionally no symptoms are evident.

Impairment of sulfobromophthalein excretion is usual; cephalin flocculation abnormalities are noted in most patients but thymol turbidity is increased in less than 25%.

Hepatic coma usually evolves gradually but massive gastrointestinal bleeding may precipitate this event. Prognosis is poor.

Bedside Method for Detecting Anemia

JACOB J. SILVERMAN, M.D., STATEN ISLAND HOSPITAL, N.Y., states that anemia may be evaluated quite accurately by observing the color of the palmar creases. The method is more valuable than examinations of the skin, mucous membranes, conjunctiva, and fingernails.

To accentuate color contrast between the skin and creases, the patient's hand is forcibly stretched by hyperextending and spreading the fingers. Further stretching of palmar skin is facilitated by the opposing thumbs of the examiner (see illustration). When the normal bright

pink color of the creases is lacking, the hemoglobin level is probably less than 7 gm. per 100 cc.

Bedside method for judging anemia. J.A.M.A. 155:902-903, 1954.

Management of Chilblains

R. B. LYNN, M.D.

Postgraduate Medical School of London

Blotching or ulceration of the skin from damp cold may be prevented from becoming chronic by warm clothing and avoidance of further exposure to cold.*

Perniosis, or chilblains, may be divided into two stages: acute, a completely reversible state, and chronic, an irreversible condition in which tissue changes are permanent and ulceration may ensue.

Acute chilblains usually occur during the winter months, most often on the feet and legs of adolescent females, probably due to lack of protective clothing. In boys, the hands are more frequently involved. The condition begins with burning and itching of the extremities, and the skin becomes red or cyanotic, cold, and slightly swollen. Well-defined blebs, sometimes hemorrhagic, form if exposure is prolonged. Healing is delayed if the blisters become infected or the skin is broken by vigorous massage or burned by exposure to heat during recovery.

Acute chilblains are caused by severe spasm of the blood vessels of the skin of a susceptible person when exposed to cold and damp. Factors of susceptibility other than the residual effects of neurologic disease are unknown. Some resist-

ance develops with age, but recurrent chilblains may become chronic in middle age.

Treatment consists of keeping blisters dry and exposed. If weeping is troublesome, however, dry dressings may be applied. Excessive heat, vigorous massage, and local applications are not used. Secondary infection should be treated with systemic antibiotics. Further exposure to cold must be avoided, and extremities should be protected with appropriate warm clothing. Onset of warm weather usually leads to spontaneous cure.

Repeated and prolonged exposure to cold in a susceptible person may induce the irreversible changes of chronic chilblains. The condition progresses over several winters—rarely within one winter—to a stage of permanent discoloration, nodule formation, and, finally, ulceration of the skin.

Anterior poliomyelitis renders a limb unduly sensitive to the effects of cold. Excessive fat in the legs is also a predisposing factor, possibly because of poor vascular supply. Most patients with the condition have stout legs and thick ankles. The chronic stage is seen almost exclusively in females, the average age being 35 years. The patient invariably has had previous acute chilblains. The lower third of both

^{*}Chilblains. Surg., Gynec. & Obst. 99:720-726, 1954.

legs is symetrically involved unless the condition develops in a paralyzed limb. In the affected extremities, veins appear normal and major arteries are palpable. Arteriographic examination usually reveals no abnormalities.

Severe chilblains with painful ulceration may react symptomatically to bed rest and elevation of extremities. Excessive warmth often causes exacerbation of pain. Topical therapy may be helpful. Cultures should be obtained from ulcers and secondary infection treated with the appropriate antibiotic. Sympathectomy may prevent recurrence of ulceration, but subjective improvement is more noticeable. The sense of coldness, heaviness, and burning is relieved along with ulceration, but ankle thickness, pigmentation, and color changes are not substantially altered. Wearing of elastic stockings may increase comfort.

Prophylaxis for the susceptible individual includes warm environment and clothing and wet-proof footwear. Temporary or permanent residence in a warm, dry climate may be advisable.

Adrenocortical Steroids for Lead Colic

ENRICO C. VIGLIANI, M.D., UNIVERSITY OF MILAN, ITALY, reports that cortisone and ACTH are superior to calcium or BAL for treatment of lead colic. Pain subsides within one to two days or, in some instances, in a few hours, and the patient regains an appetite and sense of well-being rapidly.

When the diagnosis is made, the patient is given an analgesic-spasmolytic injection such as morphine and atropine for immediate pain relief. Eosinophils are counted before and after infusion. If the Thorn test is positive, intravenous infusions of 15 to 20 mg. of corticotropin in 500 cc. of 2.5% dextrose water are given at the rate of 60 drops per minute twice daily until pain has subsided for two days. If the test does not show a distinct drop in the number of eosinophils, cortisone is preferred. The oral dosage is 300 mg. the first day and 200 or 150 mg. on subsequent days until pain ceases. Injections are equally effective.

The adrenocortical steroids evidently increase the defense mechanism rather than replace a hormonal deficiency or affect lead metabolism. Lead colic is an acute crisis caused by the hyperactivity of the smooth muscle tissue of the bowel and blood vessels; the steroids probably neutralize or diminish reactivity of the tissue cells.

Simultaneous use of hormones to aid the body in defense and drugs to neutralize and eliminate the lead may constitute the best therapy for lead colic.

Treatment of lead colic with cortisone and corticotropin. Arch. Indust. Hyg. 10:491-500, 1954.

Causes of Sudden and Unexpected Death

ALAN R. MORITZ, M.D.

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Most sudden and unexpected deaths are caused by disease rather than trauma.*

POSTMORTEM examination is generally necessary to determine the cause of death when a person, presumably without disease or injury, is found dead or dies within twenty-four hours after the onset of terminal illness. Even after study, 5 to 10% of deaths remain unexplained. Functional incompetence of tissue is not always reflected by a corresponding structural alteration.

Over 10% of deaths in a large urban population may be sudden and unexpected. No age group is exempt, but the incidence is least frequent between ages 1 and 30 and over 70.

DEATHS DUE TO TRAUMA

Many injuries that do not produce significant external evidence may be fatal. If unexpected deaths are credited to disease without postmortem examination, a large number of homicides, suicides, and fatal accidents remain undetected.

Head injury is one of the most common traumatic causes of death apparently due to disease. The impact of a flat, padded, or plastic object against the head may produce fatal intracranial bleeding even though the skull is not fractured and injury to the scalp is not obvious. Several hours or days may intervene between injury and collapse of the patient.

Spinal shock may cause death after unsuspected injury to the cord. The lesion is frequently overlooked at postmortem examination if the cervical spine is not exposed. Blunt pressure to the neck may induce suffocation without external signs.

Impact against the thorax may rupture the heart, lungs, liver, or spleen or lacerate the lungs or air passages. Compressive pneumothorax may occur without fracture of the thoracic cage. After a blunt injury to the abdomen, hemorrhage may cause immediate death or shock or infection may be fatal in several days.

Penetrating wounds, especially in external orifices, may escape detection. Injury of the female genital tract during induction of abortion is common. Wounds produced by slender instruments, such as ice picks, may be accompanied by only slight bleeding and are easily overlooked, especially in hair-covered areas.

The most common fatal poisoning agents are barbiturates, alcohol, carbon monoxide, arsenic, strychnine, and cyanide.

^{*}Sudden and unexpected death due to disease. GP 10:35-42, 1954.

DEATHS DUE TO DISEASE

Almost any disease capable of causing death may do so unexpectedly. The principal mechanism of sudden death is interference with circulation or respiration.

Coronary atherosclerosis is the most frequent cause of unexpected death in men over 40 years of age but may occur in either sex after the second decade. The first and fatal attack often occurs when the patient is at rest. Sometimes, no major coronary artery is completely occluded. In many young persons, the occluded area may be small and missed when dissection is incomplete. Stress from emotion or exertion may precipitate fatal insufficiency in a diseased heart.

Myocardial infarction occasionally occurs when coronary arterial disease is asymptomatic. In such instances, death may result when the unrecognized infarct ruptures and produces intrapericardial hemorrhage; cerebral embolism occurs after a thrombus on the inner surface of the infarct dislodges or when the heart dilates suddenly.

Patients may adjust remarkably well to valvular heart disease only to collapse unexpectedly while at rest or succumb to cardiac dilatation if work load of the circulation is suddenly increased. Cerebral thromboembolism may be rapidly fatal in persons with mitral stenosis or unsuspected vegetative endocarditis.

Acute heart failure secondary to myocarditis may occur after infectious disease. Even slight respiratory infections may precipitate exudative myocarditis. Phlebothrombosis and pulmonary embolism rarely occur unless the patient is confined to bed or immobilized with splints or casts. Death may be sudden when femoral phlebothrombosis is asymptomatic.

Hemopericardium with cardiac tamponade may be caused by rupture of the thoracic aorta due to idiopathic medial necrosis or by rupture of the heart after myocardial infarction. Generally, no signs accompany medial necrosis until the wall ruptures.

A shocklike state usually occurs when fulminating infection causes death. Meningococcemia produces the Waterhouse-Friderichsen syndrome with cutaneous purpura and hemorrhagic adrenal cortical necrosis. Pneumococcic infection is still a common cause of sudden death.

Perforation of abdominal viscera, as with peptic ulcers, may precipitate rapidly terminal illness. Fatal exsanguination is most frequently caused by rupture of esophageal varices due to hepatic cirrhosis or erosion of a gastric or duodenal artery because of peptic ulcer.

Berry aneurysms, hypertensive cerebrovascular disease, and gliomas may lead to intracranial bleeding, increased pressure in the brain, and death. Unsuspected brain tumor may cause edema and collapse.

Interference with pulmonary ventilation by massive obstructive edema secondary to slight infection, rapidly obstructive bronchial exudates, or, occasionally, fulminating diphtheria may be responsible for sudden death. More frequently, the mechanism of death from respiratory infection is not apparent.

Testing of Cardiac Function

JAMES A. CAMPBELL, M.D., AND JOHN S. GRAETTINGER, M.D. University of Illinois, Chicago

Several cardiac function tests are useful adjuncts in diagnosis and treatment of heart disease.*

Accurate investigation of previous disease and repeated careful physical examinations are necessary for assessment of heart damage. A number of cardiac function tests, most of which are available to all physicians and can be performed with simple equipment at the patient's bedside, aid in evaluating the cardiac status of patients who present problems in diagnosis and treatment.

Measurement of venous pressure aids in diagnosis of congestive failure and furnishes a quantitative means of determining therapeutic results. Persistence of elevated venous pressure in a patient receiving treatment for cardiac decompensation is a poor prognostic sign.

Elevation of venous pressure results from inadequate cardiac output and pooling of blood in the venous system. Conditions other than congestive failure associated with elevated venous pressure include extracardiac impediment to venous return, such as pericardial effusion or mediastinal mass; disease of the tricuspid valve; and thyrotoxicosis with anemia. Elevated pressure is sometimes a physio-

logic response, as in normal persons during exercise.

Venous pressure may be roughly estimated by degree of distention of neck veins or by the point of collapse of an arm vein during elevation of the arm above the atria. However, the most reliable method is the use of a manometer connected to a 3-way stopcock and a 19- or 20-gauge needle inserted into an arm vein elevated to the level of the atria, approximately 10 cm. above the patient's back. After venipuncture, the needle is flushed with sodium citrate or normal saline from a syringe, and a spinal fluid manometer is filled with the fluid. The fluid is then directed from the manometer through the vein until the meniscus no longer falls. Venous pressure is then measured as the vertical distance from the vein to the meniscus and is expressed in millimeters of water. The value is normally 70 to 100 mm.

Determination of liver size and hepatojugular reflex is often of value, since an enlarged, tender liver usually is found in patients with congestive failure and fluid retention. The number of centimeters that the liver projects below the costal margin and the degree of tenderness should be recorded daily, since changes may be rapid and often precede visible edema.

*Application of cardiac function tests. M. Clin. North America 39:31-37, 1955.

A positive hepatojugular reflex may be obtained by pressure on a distended liver with subsequent displacement of blood into the vena cava. The neck veins become abnormally distended and remain thus for several heart beats. The test may be used in differentiating the hepatomegaly of cardiac decompensation from that of cirrhosis or other diseases with ascites or edema.

Circulation time is often of diagnostic aid. In most persons with congestive failure, the velocity of blood flow is reduced. The circulation time from an arm vein through the pulmonary circuit to the tongue is easily measured by injection of 2 cc. of Decholin into an antecubital vein and notation of the time elapsing until the patient notes a bitter taste at the base of the tongue. This time is normally about eighteen seconds.

When cardiac output is high, as with thyrotoxicosis, beriberi, anemia, or arteriovenous fistulas, circulation time may be normal or even shortened. A very short circulation time should suggest the possibility of a right-to-left intracardiac shunt, as with atrial or ventricular defects or an overriding aorta.

The simplest and most useful quantitative measurement in management of congestive failure is frequently recorded body weight. A change in body weight is a more sensitive index of fluid retention than observation of edema, since from 15 to 20 lb. of fluid can be retained before edema becomes manifest.

Excessive fluid intake above urine volume and estimated insensible water loss suggests potential edema. Decreasing urine output may reflect increasing congestive failure and renal insufficiency or electrolyte disturbances.

Other measurements valuable in assessing cardiac function include pulse pressure, serial vital capacity determinations, and heart rate.

Needle Biopsy of the Liver

JAMES WARD, M.D., NATIONAL CANCER INSTITUTE, AND LEON SCHIFF, M.D., PHILIP YOUNG, M.D., AND E. A. GALL, M.D., UNIVERSITY OF CINCINNATI, state that needle biopsy is an important adjunct for diagnosis of hepatic neoplasm. Specimens demonstrated the lesions in nearly three-fourths of 111 patients subsequently found to have neoplasms of the liver. All but 3 patients had hepatomegaly, probably the most important indication for biopsy. A Vim-Silverman needle and transpleural approach were generally used.

Primary hepatoma and metastatic carcinoma can usually be differentiated by the procedure, and malignant lymphoma and leukemia can often be identified. Biopsy specimens seldom indicate

primary sites of metastatic lesions.

Severe complications are rare if technic is good.

Needle biopsy of the liver. Gastroenterology 27:300-306, 1954.

Anticoagulants in Myocardial Infarction

MORTON M. HALPERN, M.D., LOUIS LEMBERG, M.D., MARTIN BELLE, M.D., AND HERBERT EICHERT, M.D. Jackson Memorial and Mercy hospitals, Miami

Until an accurate prognosis can be established, anticoagulant therapy is probably advisable for all individuals with acute myocardial infarction.*

During the first forty-eight hours after coronary occlusion, the patient's chances for survival are difficult to determine. Since anticoagulants are of considerable value in patients with a poor prognosis, withholding these drugs during this period is rarely justifiable. If, after forty-eight hours, the outlook appears satisfactory, the anticoagulants can be stopped.

An analysis was made of the clinical course and subsequent outcome of 107 patients. As expected, the mortality was greater in older persons, probably because of the higher incidence of severe attacks in later life.

An estimation of prognosis was made by the physician after twenty-four hours and again after forty-eight hours. In 31 instances, the initial decision was reversed, emphasizing the difficulty of evaluation in early stages of the condition.

Previous angina pectoris is not a significant factor in prognosis although in some instances the condition may denote improved collateral circulation and hence a more favorable outlook. Hypertension and cardiac arrhythmias other than ventricular tachycardia likewise have little effect on the eventual result. Apparently, patients with hypertension are more likely to have a cerebral vascular accident during convalescence but less apt to have a second infarction. A better prognosis can be expected in patients with few or no QRS changes in the electrocardiogram, probably because of the smaller size of the infarct.

The most ominous signs of an acute attack are severe shock and acute pulmonary edema. Mortality rates may double or triple. Previous congestive heart failure, although not sufficiently emphasized, is also a grave finding. Anticoagulant therapy should be considered mandatory when the patient has had pulmonary embolism or thrombophlebitis.

The size of the infarct is probably the most important factor in deciding the final outcome but only rough methods can be used to estimate the extent of infarcted tissue. Although the relative value of the following signs has not been established, all are manifestations of the

^{*}The selective use of anticoagulants in acute myocardial infarction based on initial prognosis. Ann. Int. Med. 41:942-951, 1954.

size of infarction: pericardial friction rub, diastolic gallop, diabetes, azotemia, rapid pulse, low pulse pressure, muffled or tic-tac rhythm, cyanosis, rapid respirations, fever over 101° F., clammy perspiration, hiccups, clouded sensorium, high white blood count, and bundlebranch block.

During convalescence, thromboembolism, spread of infarction, and heart failure are all serious conditions causing higher mortality rates. The value of anticoagulant therapy in preventing the spread of an infarct has not been ascertained. The choice of anticoagulants includes heparin, dicumarol, and Tromexan. Heparin therapy is controlled by keeping the Lee-White clotting time at thirty minutes or above. Dicumarol and Tromexan dosages are regulated by daily prothrombin times.

The over-all mortality was 14%. Of 82 patients receiving anticoagulants, 15.8% died; of 25 not receiving the drugs, 8% died. The mortality rate among patients considered good risks was 5%; among those regarded as poor risks, the rate was over 25%.

Hemochromatosis and Hemosiderosis

MARTIN S. KLECKNER, JR., M.D., ARCHIE H. BAGGENSTOSS, M.D., AND JAMES F. WEIR, M.D., MAYO CLINIC, ROCHESTER, MINN., find that hemochromatosis and transfusional hemosiderosis are separate and distinct entities.

Hemochromatosis is slowly progressive, occurs almost exclusively among men, and becomes manifest late in life. Cirrhosis is always coexistent, and diabetes mellitus, skin pigmentation, and testicular atrophy are frequent.

Transfusional hemosiderosis occurs as often in women as in men; young persons may have the disease. Cirrhosis of the liver is lacking or a coincidental finding, and diabetes mellitus and skin pigmentation occur infrequently.

Chronic overloading of the body by iron, from blood transfusions or other factors, apparently does not cause hemochromatosis. Even though the tissue iron is sometimes as great with hemosiderosis as with hemochromatosis, deposits of iron in bile ducts and parenchymatous damage of the pancreas are infrequent with the former condition. Also, the distribution of iron in the tissues differs in the two diseases.

The differential diagnosis often requires pathologic study. Needle biopsy of the liver is the most reliable method for detecting hemochromatosis. Skin biopsy, determination of serum iron concentration, and identification of hemosiderin in the urine are sometimes helpful.

Hemochromatosis and transfusional hemosiderosis. Am. J. Med. 16:382-393, 1954.

Symptomatic Abdominal Aortic Aneurysm

Resection and Replacement with Bifurcation Aortic Homograft

E. S. BRINTNALL, M.D.*

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Case Report Prepared for Modern Medicine

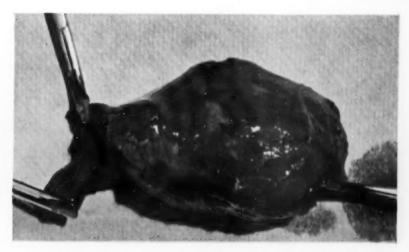


Fig. 1. The resected aneurysm, aortic bifurcation, and segments of common iliac arteries are shown.

A 58-year-old white male World War I veteran was admitted to the Veterans Administration Hospital January 27, 1954. He complained of increasingly severe nonradiating lower back pain of one year's duration. For six weeks before admission, frequent hypodermic injections had been required for relief of pain.

Abdominal examination disclosed a slightly tender, fist-sized, and pulsating mass in umbilical region. The mass had expansile pulsation. Femoral arterial pulsations were weak and no arterial pulsation was evident in either foot. Sclerosis of peripheral arteries was moderately severe. The heart was normal. The blood pressure in the brachial ar-

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CLINICOLOR



tery measured 100; the pulse was regular at a rate of 74 a minute.

Urine and blood count were normal; hemoglobin was 16 gm. The V.D.R.L. flocculation for syphilis was negative. A chest roentgenogram revealed moderate pulmonary emphysema. An aortogram made February 5, 1954, after injection of 12 cc. of a 70% solution of Urokon sodium, showed the aneurysm 2 cm. distal to the renal arteries.

Fig. 2. The preoperative aortogram reveals that the aneurysm is located distal to the renal arteries.

Fig. 3. Operative exposure is obtained through a midline abdominal incision which extends from xiphoid to pubis.



Resection of the aneurysm was advised because of pain and tenderness. Rupture of the aneurysm was believed to be impending, and the patient was hospitalized until an appropriate graft was found.

A suitable graft was obtained under sterile conditions at an autopsy March 30, 1954. The graft was stored at 4° C. in modified Tyrode's solution containing 10% blood serum and penicillin and streptomycin. Cultures of the graft and of the solution revealed no bacterial growth.

On April 7, 1954, the aneurysm was resected, and the aortic bifurcation homograft was sutured into place. Heparin solution was inject-

ed into the iliac arteries when the aorta was clamped proximal to the aneurysm. The aorta was occluded for eighty minutes during resection of the aneurysm and replacement by graft.

The patient's postoperative course was uncomplicated except for slight thrombophlebitis of the right leg. Pain was entirely relieved and arterial circulation to the lower extremities was restored satisfactorily. The patient was discharged from the hospital May 19, 1954.

The patient was reexamined three months and seven months after operation. He had no complaints, was ambulatory, free of pain, and had gained weight.

Fig. 4. After dividing the lateral peritoneal reflection from the left colon, dissection in the retroperitoneal area exposes the aneurysm.





Fig. 5. Mobilization of the aneurysm and of the aortic bifurcation is complete. The left renal vein is seen crossing normal aorta proximal to the aneurysm.

Fig. 6. The aortic bifurcation homograft has been sutured into place with interrupted and continuous everting sutures of 0000 arterial silk. Circulation is reestablished through the graft.



Acute Poisoning in Children

ROBERT D. SEMSCH, M.D. Minneapolis

Each year, over 1,000 children in the United States die of accidental poisoning.*

A CHILD may become poisoned by [1] inhalation, as of carbon monoxide or carbon tetrachloride; [2] absorption through the skin, as with aniline dye, mercury, or boric acid; [3] injection, by errors in dosages of narcotics or sedatives; and [4] ingestion. Of these causes, ingestion is most frequently responsible, probably because of the inherent tendency of a child to put things into the mouth.

Symptoms of acute poisoning vary with the substance consumed but usually fall into one or more groups. The most common gastrointestinal symptoms are nausea, vomiting, and abdominal pain. Respiratory signs range from slight hyperpnea to complete respiratory collapse with subsequent loss of consciousness.

Circulatory disturbances may be manifested by cyanosis, hemorrhage, and shock. Evidence of erosion of oral and pharyngeal mucosa will be found after ingestion of lye, phenol, alkalies, and acids.

Treatment should be immediate. Ingested poison is best removed by gastric lavage. However, this method should not be employed when corrosive substances have been consumed, as the esophagus may perforate. The procedure is also inadvisable in the unconscious or convulsive patient because of the danger of aspiration.

A large-diameter tube facilitates lavage. The nasopharynx should be kept free of mucus and vomitus by suction. The stomach is repeatedly washed with small amounts of solution, using a minimum total volume of 1 liter. If the desired solution for the particular poison is not immediately available, water should be used.

Before the tube is withdrawn, the specific or universal antidote is placed in the stomach and the tube is pinched to prevent aspiration. Emetics are usually inadequate to empty the stomach and are difficult to administer.

Effective antidotes are not available for every known poison. BAL is of value for heavy metal poisoning if given before tissue damage occurs. The agent is administered intramuscularly, 2.5 mg. per kilogram, at four-hour intervals for twelve injections, then every six hours for four doses. Ephedrine sulfate in doses of 25 mg. orally with each injection will help offset unpleasant side effects.

If no specific antidote is available or the nature of the poison is un-

^{*}Acute poisoning in children. Minnesota Med. 37:862-866, 897, 1954.

ACUTE POISONING IN CHILDREN

Poison	Common Source	Acute Symptoms	
Strychnine	Cathartics, insecticides, rodenticides	Central nervous system stimulation, hyperreflexia, opisthotonos, convulsions	
Arsenic	Insecticides, rodenticides, plant sprays, some paints	Constriction of throat, abdominal pain, projectile vomiting, diarrhea ⇒ rice water stools ⇒ bloody stools, convulsions, and/or coma	
Lyc	Drain pipe, toilet bowl cleaners	Burning pain in mouth and stomach, mucous membranes soapy and ulcerated, bloody vomitus, collapse	
Sodium hyposulfite	Toilet bowl cleaners, bleaching agents, washing powders	Vomiting, corrosive burns of lips, mouth, and tongue	
Salicylates	Aspirin, oil of wintergreen	Hyperpnea, listlessness, vomiting, dizziness, mental confusion, acidosis, hemorrhagic manifestations	
Barbiturates	Sedatives	Somnolence → stupor → coma, respiratory and circulatory collapse	
Hydrocarbons	Kerosene, gasoline, naphtha, benzene, cleaning fluids, fuel oil	Burning pain in mouth, nausea and vomiting, drowsiness, confusion, fever. Aspiration common bronchopneumonia	
Fluoride	Insecticides	Excess salivation, abdominal pain, hematemesis, shallow respirations, respiratory collapse	
Carbon tetrachloride	Cleaning fluids, fire ex- tinguishers, solvents for oils and fats	Nausea and vomiting, headache, inebriation, convulsions. Late effect, liver necrosis	
Nicotine	Insecticides, plant sprays, tobacco	Nausea and vomiting, mental confusion, salivation, abdominal cramps, convulsions, coma, respiratory failure	
Mercury	Antiseptics, fireworks, insecticides	Abdominal pain, vomiting, bloody diarrhea, circulatory collapse, kidney damage → oliguria → anuria	
Aniline dye	Yellow and orange crayons, shoe polish	Apathy, dyspnea, cyanosis due to methemoglobinemia	
Ammonia	Household ammonia	Burning in mouth and stomach, nausea and vomiting, abdominal pain, respiratory failure	
Phosphorus	Rodenticides, roach poison, fireworks, imported matches*	Nausea and vomiting, abdominal pain, diarrhea, shock, garlic odor to breath, liver and kidney damage	
Camphor	Camphorated oil, moth repellents†	Odor to breath, headache, excitement bedelirium convulsions	
DDT	Insecticides	Nausea and vomiting, weakness, vertigo, disorientation, coma	
Cyanide	Rodenticides, metal polish, silver polish	Odor of bitter almonds on breath, giddiness, headache, cyanosis, rapid coma	

Matches made in the United States now consist of insoluble phosphorus trisulfide and are relatively harmless.
 Many moth repellents now contain paradichlorobenzene which is relatively nontoxic.

	Treatment	
Lavage	Antidote	Supportive
If no convulsion, 1:10,000 potassium permanganate	No specific. Use universal antidote.	Sedation, oxygen
1% sodium thiosulfate	BAL	Morphine for pain, stimulants. Treat for shock.
No and no emetic	Dilute vinegar solu- tion or lemon juice, olive oil for pain	Fluids
If no ulceration, weak vinegar solution	No specific	Fluids
Milk or 1:10,000 potassium permanganate	No specific, instill saline cathartic in stomach after lavage	Oral or parenteral fluids. Watch electrolyte balance.
If conscious	Picrotoxin 1 to 10 mg, intra- venously at 15- to 30-minute intervals. Instill saline cathartic in stomach after lavage.	Fluids, stimulants, oxygen
No	No specific	Oxygen, fluids, antibiotics
Calcium chloride or milk	No specific	Fluids, calcium lactate intravenously
1:10,000 potassium permanganate	No specific	Oxygen, fluids, high- protein and car- bohydrate diet
Tannic acid or 1:10,000 potassium permanganate	No specific	Oxygen, stimulants
Copious amounts of milk	BAL	Fluids
Water	1% methylene blue intravenously	Oxygen, whole blood
No	Weak acids, olive oll	Fluids
2% copper sulfide then 1:10,000 potassium permanganate	No specific	Fluids
Water	No specific	Sedation, no opiates
Water	No specific	Fluids, sedation, calcium gluconate
Early, 1:10,000 potassium permanganate	Immediate therapy may be of some value. Principle of treatment is to produce methemoglobin which in turn combines with the cyanide to form nontoxic cyanmethemoglobin. Inhale amyl nitrite pearl. Follow with 10 cc. of 10% sodium nitrite intravenous	

known, a universal antidote containing 2 parts charcoal and 1 part each of magnesium oxide and tannic acid may render the poison innocuous or unabsorbable.

Regardless of the initial treatment, close observation is mandatory, preferably in a hospital. Proper use of oxygen, blood, electrolytes, and analgesics may be lifesaving.

Prevention of poisoning in children must be stressed. The primary responsibility lies with the parents and the physician, but the community should take an active part in poison control. The fact that 99% of accidental poisonings are a result of parental neglect must be reemphasized. The physican should begin education of the family in accident prevention before the child begins to crawl and should discourage the use of candylike medications.

Leprechaunism: a Familial Disorder

W. L. DONOHUE, M.D., AND IRENE UCHIDA, PH.D., THE HOS-PITAL FOR SICK CHILDREN AND THE UNIVERSITY OF TORONTO, ON-TARIO, describe a rare familial disorder comprising peculiar and unusual facies and extensive endocrine disturbances. The syndrome was observed in 2 sisters, first and fourth surviving children of a consanguineous marriage, and was probably the result of homozygous combination of a rare recessive gene which caused widespread somatic abnormalities. Fetal growth apparently ceased at the seventh month of pregnancy; regression of the uterine mass was observed in the mother about the same time.

At birth, the siblings had the development and weight of a sevenmonth fetus. Dystrophy, emaciation, and muscle wasting were prominent. Large wide-set eyes, big low-set ears, Negroid features, and hirsutism gave the infants an elfin appearance. Abnormal hormonal stimulation was evidenced by hypertrophy of the clitoris and breasts in each infant.

Each child failed to improve and was extremely susceptible to infection. The infants died in forty-six and sixty-nine days, respectively. No similar condition was observed in the ancestors of the infants.

Postmortem examination revealed widespread endocrine and metabolic abnormalities, large ovaries with numerous follicular cysts, and pancreatic hyperplasia of the islet tissue with increased insulin content. Distention of Hassall's corpuscles was especially prominent. Other endocrine glands appeared normal. The kidneys were hypertrophied and calcified. In the liver, patchy areas with swollen cells and foamy cytoplasm and abnormal glycogen and iron deposits were seen.

Leprechaunism. J. Pediat. 45:505-519, 1954.

Therapy for Erythroblastosis Fetalis

ALEXANDER S. WIENER, M.D., IRVING B. WEXLER, M.D., AND GEORGE J. BRANCATO, M.D.

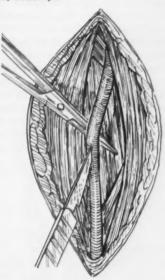
Jewish and Norwegian hospitals, Brooklyn

Exchange transfusion is recommended when a newborn infant is Rh positive and the maternal antibody titer is above 8 units.*

The severity of erythroblastosis fetalis is governed by the height of the titer of maternal Rh antibodies which coat the fetal red cells. Since coating per se is apparently innocuous, an accessory complement-like factor is believed responsible for clumping or lysis.

The fetus is protected in utero from harmful effects of antibodies, because complement and related substances are immature. However, if the mother's titer is extremely high, the baby may be stillborn or, if born alive, may have severe manifestations of the disease. In many cases the infant appears healthy at birth but exhibits evidence of the disease in the early neonatal period.

The depth of jaundice and the degree of anemia are not directly related. Although brain injury is more frequent in severely jaundiced babies, some recover completely while others with slight jaundice die with brain damage. Apparently, therefore, tissue damage is primarily a result of vascular injury from intravascular conglutination of the baby's coated cells.



Simple addition of blood cannot prevent or counteract this harmful process. Therefore, removal of the coated Rh-positive cells, before intravascular clumping occurs, and replacement with Rh-negative cells incapable of combining with the free Rh antibody is necessary.

Theoretically, replacement of the infant's red cells should be complete. However, because bleeding and administration of blood are done simultaneously, total replacement is impossible. By use of a pint of blood, an adequate replacement of 85% can be accomplished.

^{*}Treatment of erythroblastosis fetalis by exchange transfusion. J. Pediat. 45:546-568, 1954.

TECHNIC

After immobilization of the infant, the saphenous vein is exposed at the angle and cannulated with a blunt 20-gauge needle. Heparin, 200 units diluted in 2 cc. of saline, is injected through the needle. A 3-way stopcock is attached which bears tubing from the blood reservoir and a 10-cc. Luer-Lok syringe for injection of blood.

The radial artery is isolated, lifted on a closed mosquito clamp, and nicked with a scalpel (see illustration). Before blood is administered at the ankle, 50 cc. is allowed to run from the arterial incision. Blood is then injected at a rate equal to the arterial flow.

During the procedure, 1 cc. of a 10% solution of calcium gluconate is given for every 100 cc. of concentrated blood administered. At the end of the transfusion, the incisions are closed with fine silk and pressure bandages applied. Neither the artery nor vein is ligated.

Postoperatively, the infant is given 100,000 units of penicillin every eight hours for two days and, if necessary, placed in an incubator with continuous oxygen therapy.

The more protracted the procedure, the less likely is reaction. For convenience's sake, however, forty-five minutes is sufficient. Never less than thirty minutes should be taken, as citrate shock may occur.

Effectiveness of Tetracycline

SIGMUND SCHWARZER, M.D., ROBERT REEVES, M.D., ALBINA CLAPS, M.D., AND ARTHUR F. ANDERSON, M.D., LENOX HILL HOSPITAL, NEW YORK CITY, find that tetracycline is a promising broad-spectrum antibiotic for oral administration to children. Patients have high tolerance to the drug, and side reactions rarely occur, even with large daily doses.

The effective dose is 25 mg. per kilogram daily, given at six- to eight-hour intervals. Serum levels are generally highest about two hours after administration of a single dose and are roughly proportional to the size of the dose. A cumulative effect is usually noticeable by the second day of therapy. Diffusion into cerebrospinal fluid is negligible in patients without meningeal inflammation. Urinary excretion begins one hour after administration and is greatest between the third and sixth hours.

Tetracyn was given orally to 51 hospitalized children with such infections as bronchitis, nasopharyngitis, tonsillitis, otitis media, or pneumonia. Temperatures were reduced to normal in almost half of the patients within twelve hours, indicating rapid defervescence of the drug. Of the total group, 43 patients were cured, 4 improved, 1 unimproved, and 3 had recurrences after therapy was discontinued.

Fetracycline: studies on absorption, distribution, excretion, and clinical trial in children. J. Pediat. 45:285-292, 1954.

Dysfunctional Uterine Bleeding

LORIN J. MICKEY, M.D.

Louisiana State University, New Orleans

Normal menstrual function can often be established in patients with profuse or prolonged uterine bleeding not associated with structural change.*

When disease of the reproductive or hematopoietic systems is not responsible for menstrual irregularities, a diagnosis of dysfunctional uterine bleeding may be warranted. The condition is apparently associated with derangement of the pituitary secretion cycle.

PHYSIOLOGY

During puberty, the menopause, or after delivery, the pituitary gland may not produce adequate amounts of luteinizing or luteotrophic hormones. Follicles are stimulated but ovulation and corpus luteum transformation do not occur. Whenever estrogen production drops sufficiently, vascular support for the endometrium fails and withdrawal bleeding occurs.

If estrogen output is maintained longer than the normal cycle with continued proliferation of the endometrium, no vaginal bleeding occurs through several cycles. The endometrium becomes hyperplastic. When estrogen production finally wanes, profuse withdrawal bleeding ensues.

DIAGNOSIS

Initially, associated endocrine irregularities should be sought. Basal metabolic rates, urinalysis, blood and platelet counts, and bleeding and clotting times are determined. A glucose tolerance test is mandatory if glycosuria is found. Related hypothyroidism, diabetes mellitus, anemia, or defective clotting mechanisms demand specific therapy.

Threatened or incomplete abortion is often confused with dysfunctional bleeding. Amenorrhea, breast tenderness, slight enlargement and softening of the uterus, and unusual bleeding are noted with both conditions. Differentiation necessitates careful pelvic examination and meticulous curettage under anesthesia.

THERAPY

Apparent anomalies must first be corrected. Anemia, malnutrition, and obesity impede recovery of endocrine processes. Objectives of treatment are immediate hemostasis and a return to normal function and fertility. Specific measures include surgery, irradiation, and hormone administration.

During puberty, treatment is warranted only if repeated blood replacement is necessary. If pregnancy or organic disease is not found, hormone therapy is instituted. Cu-

^{*}Dysfunctional uterine bleeding. J. Louisiana M. Soc. 107:24-29, 1955.

rettage is not required for young patients unless hemostasis cannot be attained by hormones.

Bleeding may be stopped within forty-eight hours by administering 15 to 25 mg. of stilbestrol intramuscularly daily for three or four days. Progesterone in oil, 25 mg., is then given intramuscularly on alternate days for 3 doses. About four days later withdrawal bleeding accomplishes a medical curettage.

Cyclic therapy is started with oral stilbestrol, 1 mg. daily for twenty-one days, and progesterone in oil, 25 mg. intramuscularly on the twenty-first, twenty-third, and twenty-fifth days. Menstruation usually begins on the twenty-eighth day. Stilbestrol dosage is increased if bleeding starts during the medication period. Treatment is continued for three cycles and stopped. Normal function is usually established.

During the active reproductive period, curettage will control bleeding in about one-third of patients. If histologic examination reveals proliferative or hyperplastic endometrium, the basal temperature

should be charted. Endometrial biopsies are made at the onset of subsequent bleeding to see if ovulation occurs. Cyclic hormone therapy is required if the patient does not ovulate after four or five months.

Withdrawal bleeding may also be produced by androgens. The dosage is 25 mg, intramuscularly once or twice a week until bleeding stops. Not more than 200 mg, is given in one month. Androgens are inadvisable when the patient is unmarried or has hirsutism.

If the patient hemorrhages despite repeated curettage and hormone administration, hysterectomy may be the alternative to repeated blood transfusions.

During the *menopause*, dysfunctional bleeding is frequently associated with pelvic relaxation or disease. Hysterectomy with repair of the pelvic floor and removal of other lesions is done after curettage. Androgens may effect hemostasis. Cyclic estrogens and progesterone are not used. Irradiation is done only when surgery is impossible.

Pregnancy after Carcinoma

WILLIAM BENBOW THOMPSON, M.D., LOS ANGELES, believes that with judicious care a pregnant woman who has had cancer may not require therapeutic abortion. When the malignant disease has been successfully treated, pregnancy is not hazardous.

Of 10 pregnant women who had been treated for cancer, 9 were able to successfully deliver; pregnancy was terminated in 1 patient with a permanent colostomy after resection of cancerous bowel.

Reproductive function was not impaired by excision or radiation therapy of vital organs. In 2 cases, delivery was successful many years after amputation of extremities because of bone sarcomas.

Pregnancy following malignancy. Am. J. Obst. & Gynec. 67:810-824, 1954.

Thromboembolic Disease and Pregnancy

JOHN C. ULLERY, M.D.
Pennsylvania Hospital, Philadelphia

Mortality from thromboembolic disease during pregnancy and after delivery may be reduced by anticoagulant therapy.*

With a condition as rare as antepartum thromboembolic disease, dogmatism in treatment should be avoided. However, anticoagulant therapy appears to give the best results. Anticoagulants are safe for the mother and child if prothrombin time is maintained within eighteen to twenty-three seconds, 20 to 30% of normal, regardless of the state of pregnancy.

Nonobstructive phlebothrombosis and obstructive thrombophlebitis are more common post partum. Thromboembolic disease may occur spontaneously without apparent cause or after febrile disease or infection, operative obstetric procedure, or trauma.

Phlebothrombosis is more dangerous than obstructive disease since embolic phenomena occur more readily and may not be recognized until the patient has pulmonary embolism. Important signs and symptoms are a positive Homans' sign, pulse rate increased out of proportion to the body temperature, increase in circumference of the involved limb, and regional pain.

Postpartum thrombosis may be prevented by controlling predisposing factors. Varicosities during pregnancy should be treated by injection, surgery, or elastic stockings. Excessive weight gain during pregnancy must be prevented. Prompt therapy is necessary if infection is not avoided. Traumatic factors at delivery should be eliminated whenever possible.

Venous stasis in the lower extremities during the postpartum period may be prevented by early ambulation and avoidance of tight abdominal binders and dressings and chilling. Since vomiting, diarrhea, fever, or prolonged labor may produce dehydration, intravenous solutions should be administered.

Anticoagulants may be given to patients who had venous thrombosis during previous pregnancies. Anemia is probably an important etiologic factor and should be corrected by transfusions if necessary.

Anticoagulants should be administered when postpartum venous thrombosis is diagnosed. Usual dosage is 50 mg, of heparin intravenously and 300 mg, of dicumarol by mouth. The dicumarol dose is repeated in twenty-four hours and is then regulated by daily prothrombin time determinations. The factor should be close to 20% of normal.

Obst. & Gynec, 68:1243-1260, 1954.

The patient is ambulatory in a few days. Therapy is continued until activity is resumed, usually in ten to fourteen days.

Anticoagulant therapy prevents pulmonary embolism and extension of venous thrombosis and reduces venous insufficiency. The only function of ligation is to prevent embolism in the region distal to the ligature. Iliac and vena cava ligation is preferred for multiple septic emboli.

General measures such as elevation of the affected extremity, heat, or elastic bandages may be used in conjunction with anticoagulants or surgery. When severe pain and vasospasm accompany thrombophlebitis, lumbar sympathetic nerve block, continuous caudal analgesia, and intravenous procaine may be used.

Anticoagulants should not be administered to patients with hemophilia, thrombocytopenic purpura, leukemia, impaired hepatic or renal function, severe hypertension, subacute bacterial endocarditis, or open wounds or ulcerations, particularly of the gastrointestinal tract.

Posthysterectomy Pseudomenstruation

THOMAS H. GREEN, JR., M.D., AND JOE V. MEIGS, M.D., MASSACHUSETTS GENERAL HOSPITAL, BOSTON, report that cyclic bleeding may occur from areas of endometriosis in the vaginal vault after total hysterectomy. The lesion is probably caused by implantation of endometrial tissue. Metaplasia of cellular elements adjacent to the vaginal apex and derived embryologically from the müllerian epithelial system is an alternative explanation.

The diagnosis can be made when a woman whose uterus has been removed has regular bleeding with ovarian molimen and bluish-red lesions and palpable nodularity are noted in the vaginal apex. Biopsy confirmation is difficult because the bulk of the lesion remains submucosal and cannot be reached with standard biopsy forceps. Furthermore, a surgical procedure is often not feasible.

Vaginal bleeding may not be cyclic, especially if the patient is near the menopause or ovarian function is low. When bleeding is irregular, the lesion must be distinguished from healing granulations in the vaginal apex, atrophic vaginitis, vaginal adenosis, and carcinoma of the vagina. Biopsy material can almost always be obtained from cancerous growths.

Therapy is seldom necessary. Estrogens or testosterone may be administered if abdominal cramps, deep pelvic pain, dyspareunia, rectal pain, or diarrhea is severe, but results are not always satisfactory. Castration by surgery or roentgen-ray treatment is rarely

necessary.

Pseudomenstruation from posthysterectomy vaginal vault endometriosis. Obst. & Gynec. 4:622-634, 1954.

Induction of Labor: Methods and Signs

CHARLES RONALD STRAGHAN MAC KENZIE, M.D. University of Texas, Galveston

Termination of pregnancy is probably inadvisable in most instances unless specific conditions demand interference.*

RUPTURE of the membranes is the most important procedure for initiation of labor and may be combined with other methods. Success depends upon the state of the cervix. If the cervix is thick and undilated, labor is generally delayed even though the membranes are ruptured. Antibiotics should be administered during the latent period.

Results are excellent with pituitary extract if patients are properly selected. Intravenous dosage is 15 minims of Pituitrin or 5 minims of Pitocin in 500 cc. of 5% glucose and saline. Flow is started at 15 to 30 drops a minute and is governed by uterine response. When contractions start, the infusion is discontinued and the patient is watched carefully. The drip may be restarted but should be discontinued if uterine activity is not apparent within a few hours. The physician must remain at the bedside.

Pitocin should not be used when [1] the pelvis is contracted or capacity cannot be evaluated, [2] multiparity is high, [3] the uterus is scarred, [4] the fetus is large and in breech presentation, [5] preg-

nancy is twin, the uterus is overdistended, and the membranes are intact, [6] presentation is abnormal, or [7] the patient is exhausted or in poor physical condition. Pitocin is used without saline for hypertensive persons.

The value of elective induction of labor is controversial. Fetal mortality is probably higher when pregnancy is interrupted than when labor is spontaneous.

Interference is occasionally desirable when a patient who has had previous rapid labors lives far from the hospital. Castor oil, 2 oz., is administered at 6:00 A.M., and a large hot enema is given two hours later. Labor usually starts within a short time. The membranes are ruptured if only occasional uterine contractions occur. If the uterus does not respond to oil and enema, membranes are not ruptured and induction is postponed.

Selection of patients must be rigid when labor is electively induced. Cephalopelvic disproportion should not exist. Vertex presentation is preferable. The fetus should be mature and the head should be engaged or dipping well into the pelvis. The cervix should be ripe—that is, soft, partially effaced, and dilated at least 1 cm. Multiparas are probably most suitable.

When induction is necessitated

^{*}Induction of labor. Am. J. Obst. & Gynec. 68:981-987, 1954.

by a specific situation, conditions are rarely ideal. If rupture of the membranes is not effective, cesarean section is often advisable.

With placenta previa, induction should be delayed until the fetus is at or near term. The woman should be in the hospital because bed rest for twenty-four hours will control bleeding in 95% of instances. Blood should be readily available. Rectal or other examination is not advisable. At term, a sterile vaginal examination is done. Cesarean section is performed if bleeding becomes profuse or if the placenta is over the internal os. If the placenta is not central, the membranes should be ruptured and delivery expected from below.

A patient with abruptio placen-

tae usually delivers rapidly if membranes are ruptured after the cervix is ripe or labor has begun. Severe bleeding necessitates section.

Rupture of membranes may suffice for a patient with toxemia at or near term. Daily Pitocin infusions may help ripen the cervix and engage the presenting part.

Diabetic women are admitted to the hospital the thirty-eighth week. Membrane rupture is usually adequate if the cervix is ripe and the fetal head engaged.

Patients with cardiac or pulmonary disease often do not tolerate cesarean section and should be prepared in advance for induction. Induction is no longer recommended for cephalopelvic disproportion or postmaturity.

Renal Dysfunction and Toxemia

MILTON J. SERWER, M.D., OKLAHOMA CITY, reports that renal dysfunction associated with toxemia of pregnancy is effectively treated with intravenous procaine. Side reactions are easily controlled, and physiologic function of the kidneys is apparently restored.

The agent is given in doses of 500 mg. dissolved in 200 cc. of 5% dextrose in water. Since apprehension usually occurs after administration, 0.5 to 1.5 gm. of Sodium Amytal is given intravenously to provide sedation. Procaine metabolizes rapidly, therefore the entire solution is injected through an 18-gauge needle in about eight to ten minutes. Diuresis is improved by subsequent intravenous administration of 5% dextrose in water. The procedure is repeated every four hours for forty-eight hours or until urine output is sufficient.

Urine flow is not initiated until two to twelve hours after injection. Blood pressure is reduced only after diuresis is well established.

Intravenous procaine therapy was successful in 21 of 31 patients; 6 of the remaining 10 patients were not benefited because of preexisting chronic glomerulonephritis or other intercurrent illnesses.

Effect of intravenous procaine on anuria and oliguria associated with the toxemias of pregnancy. J. Internat. Coll. Surgeons 21:630-640, 1954.



SPECIAL EXHIBIT

OSTEOARTHRITIS AND RHEUMATOID ARTHRITIS

Diagnosis and Practical Treatment

DWIGHT C. ENSIGN, M.D., AND JOHN W. SIGLER, M.D. Henry Ford Hospital, Detroit

An outline of methods which have practical value in the treatment of the two common types of chronic arthritis: degenerative joint disease (osteoarthritis, hypertrophic arthritis) and rheumatoid arthritis (atrophic arthritis).

A Modern Medicine Exhibit adapted from a presentation made at the convention of the American Medical Association in San Francisco.

SPECIAL EXHIBIT

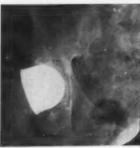
Osteoarthritis . . . diagnosis



Heberden's nodes at terminal interphalangeal joints



Osteophyte formation adjacent to the narrowed terminal interphalangeal joints



Cup arthroplasty of hip joint

AGE: over 40 years

SEX: 1 female to 1 male

No systemic symptoms . . . many patients overweight

LOCAL SYMPTOMS:

- · May be absent
- Stiffness—especially after prolonged rest—relieved by limbering-up exercises
- Pain on motion—especially overuse
 —relieved by rest and warmth
- Usually only slight joint deformity
- Limited joint motion and muscle atrophy in severe cases
- · No true bony ankylosis
- Nerve root pain in some patients with spine involvement

LABORATORY FINDINGS:

- Anemia—none
- Sedimentation rate—normal
- · Blood count-normal
- Synovial fluid—rarely increased in amount; clear, seldom clots; normal cell count

. . . treatment

BEASSIDANCE

Simple program usually adequate

PERIODIC REST:

Avoid overuse of involved joints

PHYSICAL THERAPY:

- e Local heat
- Local massage
- Active and passive exercises

SPECIAL EXHIBIT



Intraarticular injection of hydrocortisone in knee joint. Line indicates medial border of patella



Thomas collar

CORRECTION OF LOCAL STRESS AND STRAIN:

- Weight reduction
- Posture
- · Correction of faulty body mechanics

MEDICATIONS:

- · Salicylates
- Sedatives

SPECIAL MEASURES:

Knees

- Elastic supports
- Foam-rubber splints
 Intraarticular hydrocortisone
- · Patellectomy or synovectomy (selected cases)

Hips

- Roentgen therapy
- · Intraarticular hydrocortisone
- Cup arthroplasty
- · Arthrodesis

Spine

Cervical

- · Heat and halter traction
- Roentgen therapy
- · Thomas collar

Lumbosacral

- · Heat
- · Bed board
- Lumbosacral support
- · Roentgen therapy
- Fusion operation



Application of foam-rubber strips and elastic bandages to knee



Canvas sling for halter traction

Rheumatoid Arthritis . . . diagnosis

AGE: 20 to 40 years SEX: 3 females to 1 male Multiple symmetric joint involvement

SYSTEMIC SYMPTOMS:

Active phase

- · Fever
- · Weight loss
- Pallor
- · Progressive joint changes
- Rheumatoid nodules (15 to 20%)
- · Increased joint fluid

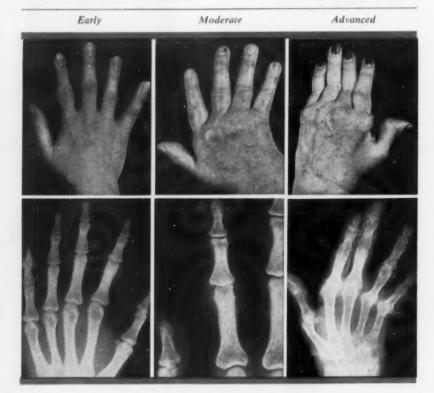
Chronic phase

· Muscle weakness and atrophy

- · Loss of joint motion
- Subluxations and flexion deformities
- Ankylosis—fibrous or bony

LABORATORY FINDINGS:

- Anemia—normocytic-hypochromic iron deficiency type
- Sedimentation rate—elevated
- · WBC-sometimes elevated
- Synovial fluid—often increased; turbid, tends to clot; increased leukocytes and polymorphonuclears



128 MODERN MEDICINE, March 1, 1955

SPECIAL EXHIBIT

. . treatment

SYMPTOMATIC THERAPY:

- Rest-mental, physical, local (splint in acute stage)
- · Salicylates to tolerance

GENERAL MEASURES:

- · Adjustment of personality factors
- · Correction of anemia
- · Provision of adequate diet
- Insurance of proper elimination
- Removal of obvious focal infection
 —antibiotics prophylactically

LOCAL MEASURES:

- Physical therapy—not in acute stage
- Prevention of deformities—orthopedic and corrective devices
- Joint aspiration and intraarticular hydrocortisone (selected cases)

MEDICATIONS:

- Salicylates—maintenance
- Sedatives
- Codeine—sparingly for severe pain; other narcotics avoided

SPECIAL MEDICATIONS:

Used only under constant personal supervision of experienced physician

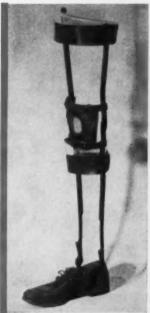
- · Gold salts-intramuscularly
- Oral cortisone or hydrocortisone small doses
- · ACTH
- Intraarticular hydrocortisone
- · Butazolidin-with care
- Combination therapy is the simultaneous use of 2 or more agents

RECONSTRUCTIVE MEASURES:

- Surgical correction
- Rehabilitation
 Physical therapy
 Occupational therapy
 Devices to permit the use of handicapped joints



Bivalved cast for knee



Long-leg caliper brace



Paring knife handle molded to patient's grip

Transmetatarsal Amputation for Gangrene

HERBERT E. PEDERSEN, M.D.

Wayne University, Detroit

A. JACKSON DAY, M.D.

Veterans Administration Hospital, Dearborn, Mich.

The productive lives of many patients with gangrene of one or more toes because of arterial insufficiency can be prolonged by distal amputation of the foot.*

Function of the extremity is excellent and symptoms are relieved after transmetatarsal amputation for gangrene limited to toes if the patient is carefully selected. Also, amputation near the knee is often obviated. Low amputation is particularly desirable because the disease occurs primarily in elderly patients with bilateral involvement who do not wear prostheses successfully.

Patients suitable for operation have gradually progressive peripheral insufficiency and gangrene is precipitated by exposure to heat or cold, trauma, infection after trimming of corns or nails, or epidermophytosis. In such instances, gangrene occurs repeatedly, hospitalization is frequent, the plantar aspect or dorsum of the foot becomes involved, and a major amputation is eventually necessary. Excision of all the toes is prophylactic and therapeutic.

Gangrene must be localized to

the toes and not progressive. Patients with stabilized open infection of the distal portion of the foot are accepted if complete excision of the lesion and primary closure are possible.

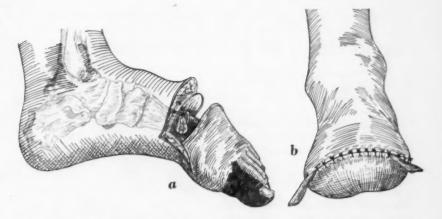
Success can be expected if the skin on the dorsum of the foot is warm and has good nutrition. However, the operation may be performed even though pulsations below the iliac or femoral artery are not palpable. Also, transmetatarsal stumps may heal if the skin over the dorsum of the foot is cool, shiny, and thin. The operation is not done if the dorsum is discolored, except for inflammation.

For two or three weeks preoperatively, the patient remains in bed with the extremity flat and the head of the bed elevated. Antibiotics are used and loose sterile dressings are worn continually except during 1 or 2 fifteen-minute foot baths in tepid water with white soap daily. During foot baths, necrotic tissue can be removed with forceps and scissors, but viable tissue should never be touched.

Infection is often severe when the patient has diabetes and must be eradicated before operation.

The amputation level is just

^{*}The transmetatarsal amputation in peripheral vascular disease. J. Bone & Joint Surg. 36-A:1190-1199, 1218, 1954.



proximal to the metatarsal heads so, when the operation is completed, only bone exists between the dorsal and plantar layers of skin and subcutaneous tissue (Fig. a). A more proximal cut would pass through deep structures of the foot and ischemic muscle.

The dorsal incision is extended across the foot from midway between the dorsal and plantar surfaces on each side at the level of bone amputation. No dorsal flap is formed. The plantar incision begins at either end of the dorsal incision and is parallel and 1 cm. proximal to the flexion crease of the toes. Both incisions must be sharp and directly down to bone. The plantar flap is dissected back to the level of bone amputation.

After the metatarsal heads are removed with a saw, the plantar tendons and sesamoid bones are excised at bone level. Closure is made atraumatically and preferably in a single layer with nonabsorbable sutures (Fig. b).

After operation, the patient must

have complete bed rest with slight elevation of the head of the bed. At least half the sutures remain for two weeks. Buerger's exercises are begun in ten to fourteen days. In three weeks, healing is usually complete and the patient may walk in loose slippers.

When all the swelling is gone, shoes with cotton in the toes and a sheet of spring steel between the layers of the sole may be worn. Final gait is excellent at a moderate speed, but the patient limps when walking fast.

Of 23 patients, healing was primary in 8 and secondary in 13; 2 failures occurred. Delayed healing is usually caused by marginal necrosis of the wound edges or infection and is most frequent among patients with no pulsations below the femoral arteries.

Antibiotics, sterile dressings, and daily tepid soaks are used when wound complications occur. Surgical removal of eschars, secondary closures, and skin grafting are not recommended.

Capsulectomy of Interphalangeal Joints

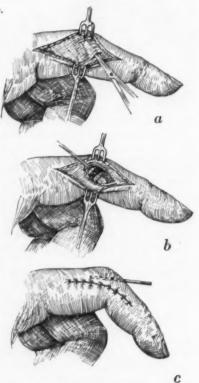
RAYMOND M. CURTIS, M.D. Baltimore

Limitation of flexion or extension in the interphalangeal joints of the fingers may be relieved by capsulectomy.*

MOTION of the interphalangeal joints of the hand may be restricted as a result of even slight shortening of the capsular ligaments. This shortening may be caused by nonuse or edema with subsequent fibrosis but is more frequently due to improper splinting and physiotherapy.

Before surgery is done, the exact anatomic structures involved in an affected interphalangeal joint must be known. Roentgenograms should be made to discover bony ankylosis or exostosis, as best results are obtained from capsulectomy if the joint is intrinsically in good condition.

If the long extensor tendons are adherent over the dorsum of the hand or the extensor muscles are shortened by fibrosis, the interphalangeal joints will be held in rigid extension when the wrist and metacarpophalangeal joints are volarly flexed. With contracture of the interosseous muscles, the fingers assume one of two positions: rigid extension at the metacarpophalangeal and interphalangeal joints or



Operative technic

limited flexion at the interphalangeal joints with fixed flexion at the metacarpophalangeal joints. If the motion at the interphalangeal joint is restricted solely by contracted collateral ligaments, the flexion deficit is not modified by either flexion or extension of the metacarpophalangeal joints.

*Capsulectomy of the interphalangeal joints of the fingers. J. Bone & Joint Surg. 36-A:1219-1232, 1954.

A lateral excision is made through the subcutaneous tissue to expose a layer of deep fascia extending volarly from the extensor-tendon mechanism on the dorsum to the sheath of the flexor tendon. The deep fascia is elevated but preserved so that joint stability will be maintained after excision of the collateral ligaments (Fig. a).

As much as possible of the collateral ligament to each side of the proximal interphalangeal joint is excised (Fig. b). When the distal interphalangeal joint is involved, preservation of a definite deep fascial cuff is difficult. Simple division of the collateral ligaments or volar plate may be sufficient.

Occasionally, when the condition has been of long standing, the volar synovial pouch becomes obliterated. This must be re-formed with a small curved elevator or by forcing the base of the phalanx into flexion.

With associated contracture of the interosseous muscle, the interosseous tendon is lengthened by tenotomy and resutured. If necessary, the extensor-tendon mechanism can be freed over the finger dorsum.

Before closing the incision, 0.5 cc. of hydrocortisone acetate is injected into each joint space. Partial flexion of the interphalangeal joint is maintained by introducing a fine Kirschner wire into the distal end of the proximal phalanx with the middle phalanx in flexion (Fig. c).

After five to seven days the wire is removed and rubber-band splinting is started. The splint gradually pulls the interphalangeal joints into acute flexion and, at the same time, produces extension at metacarpophalangeal joints. Contracted interosseus muscles, if associated, are thus stretched. Splinting is continued until the same range of motion obtained postoperatively can be maintained by active and passive exercise.

When necessary, tendolysis of the flexor tendons is performed as well as section of the contracted sheath of the flexor tendon.

Vertebral Fractures from Cortisone Therapy

PAUL H. CURTISS, JR., M.D., WILLIAM S. CLARK, M.D., AND CHARLES H. HERNDON, M.D., WESTERN RESERVE UNIVERSITY, CLEVE-LAND, believe that prolonged use of large amounts of corticotropin or cortisone can be the primary cause of vertebral demineralization and pathologic fractures.

Breaks of the thoracic or lumbar vertebrae or both structures were observed in 4 males receiving 50 to 200 mg. of cortisone per day for periods of seven months to two years. Corticotropin was occasionally substituted. Though chronic rheumatoid arthritis and disuse atrophy contributed to the lesions, metabolic osteoporosis seems to be the chief cause.

Vertebral fractures resulting from prolonged cortisone and corticotropin therapy, J.A.M.A. 156:467-469, 1954.

Results of Hip Arthroplasty

MARGARET M. SHEPHERD, M.B. Sutton Coldfield, England

The objective of arthroplasty is a relatively stable, movable, and durable hip joint.*

THE main causes for failure of hip arthroplasty are inability to maintain movement in the joint, instability, or the appearance of osteoarthritis. Gradual decrease in the range of movement, fixed deformity, or fibrous or bony ankylosis may occur.

Stability and control of the joint are perhaps most important to the patient, who must have an unconscious confidence in the reliability of his hip. Often the patient is fearful of walking without support, and, although pain is decreased after operation, the feeling of helplessness is greater.

A possible reason for failure may be as follows: In a patient with some flexion deformity before operation, the muscles about the joint—particularly the short muscles close to the joint—have undergone gradual change. As a result, the length and direction of pull is altered. With a wandering acetabulum, subluxation, or dislocation, some of the muscles take on a slinglike function, acting more as ligaments than muscles. If, during operation or shortly after, the deformity is overcorrected, some muscles may be

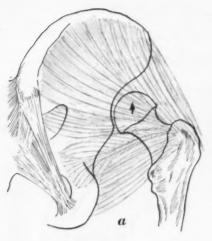
overstretched and others slackened, with resultant inability to stabilize the joint. Even though longer muscles are unaffected, function is impaired if the shorter muscles do not hold the fulcrum steady.

Although range, power, and control are apparently related, the mobility index of the patient with a poor surgical result may not be much less than for the patient with an excellent result. When the patient is recumbent without a mechanical block to movement, the long muscles may have sufficient power to produce a good range of active movement even though the small muscles are not functioning fully. The inefficiency becomes evident only with weight bearing. Therefore, a good range of movement is not associated with satisfactory function unless the joint is stable.

Slackening of the abductor muscles—gluteus medius and minimus—is caused mainly by an upward displacement of the femur (Fig. a); the piriformis, obturators, gemelli, and quadratus femoris are affected by medial displacement (Fig. b). Upward movement unaccompanied by medial displacement may stretch muscles and enable advantageous function. This may be the case with congenital dislocation or subluxation of the hip when a pronounced

^{*}A review of 650 hip arthroplasty operations. J. Bone & Joint Surg. 36-B:567-577, 1954.

NEUROSURGERY





Trendelenburg gait is not associated with insecurity. Tightening of the abductor muscles by shifting the insertions distally does not affect the slackened transverse muscles, which require considerable time for adaptation.

Arthroplasty is apparently most durable when no foreign material is introduced into the joint, less so when a foreign body is interposed between the joint surfaces, and least durable when an attempt is made to incorporate a foreign substance into one of the bones of the joint.

Arthroplasty is more likely to succeed with osteoarthritis than with rheumatoid arthritis. A good result with protrusio acetabuli is unusual, and a hip ankylosed after earlier infective arthritis may reankylose after arthroplasty. Results are best when only one hip is diseased and worst when operation is done for bilateral involvement. The procedure is least effective among older people and women.

¶ INTRACTABLE OCCIPITAL PAIN, often most severe in the suboccipital area, may be ameliorated or completely relieved by posterior rhizotomy of the second and third cervical nerves. A psychoneurotic attitude engendered by long endurance of pain is no deterrent to operation, believes William R. Chambers, M.D., of the Neuroclinic, Atlanta. The procedure should not be done for patients addicted to drugs. Rhizotomy was successful in 16 of 35 patients. Differential diagnosis is difficult, and errors in evaluation of symptoms may account for operative failures.

J.A.M.A. 155:431-432, 1954.

Injuries of the Central Cervical Spine

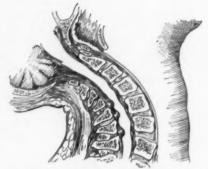
RICHARD C. SCHNEIDER, M.D., GLENN CHERRY, M.D., AND HENRY PANTEK University of Michigan, Ann Arbor

Acute central cervical cord damage is suggested by disproportionately more motor impairment of the upper than the lower extremities, bladder dysfunction, urinary retention, and varying degrees of sensory loss.*

The syndrome of acute central cervical spinal cord injury is seen most frequently after sudden, extreme hyperextension as would occur in falling on the face. Consequently, when an unconscious or incoherent patient with quadriplegia is examined, contusions and lacerations about the face are important signs.

Hyperextension injuries may occur without apparent damage to the bony spine, and normal roentgenograms do not eliminate the possibility of such damage. The syndrome also may be associated with cervical arthritis, some cervical compression fractures, and special types of hyperextension or flexion fracture-dislocations of the cervical spine. Elderly persons are most susceptible to cord damage.

During hyperextension, an inward bulge of the ligamentum flavum compresses the cord. If compression is increased by an arthritic spur of the vertebral bodies or a protruding or calcified disk, serious cord trau-



Compression of the spinal cord in hyperextension

ma with edema or hematomyelia is likely.

If physical findings are caused by central cord destruction with bleeding, caudad or cephalad spread of the lesion may occur, with progression of symptoms and eventual death. Lesser injury that is caused by concussion or contusion results in an edematous type of central cord involvement. As edema clears, gradual return of function may be expected.

Recovery of function follows a definite pattern, with return first of motor power in the lower extremities, then of bladder function, and finally of function of the upper extremities and of the finer finger motions. Recovery of sensory losses follows various patterns.

Cervical myelographic examina-

The syndrome of acute central cervical spinal cord injury. J. Neurosurg. 11:546-577, 1954,

tion is of questionable diagnostic value, since acute central damage may occur without causing a gross surface lesion. In addition, the position required for examination necessitates acute hyperextension of the cervical spine to prevent the radiopaque medium from passing upward through the foramen magnum. Therefore, the examination may aggravate the injury.

Conservative treatment is best for patients with no associated bony distortion of the spine. The patient is placed in a neutral position, and traction is applied in the plane of the body until cord swelling or edema subsides. Hyperextension must be carefully avoided to reduce the possibility of further injury to the cord.

After four or five weeks, the traction is replaced by a firm-fitting collar. If fracture-dislocation is associated, cervical fusion eventually may be necessary. Adequate physiotherapy should be started early to prevent contractures and periarthritis of the hands and arms.

Decompressive laminectomy is futile and may even cause further cord destruction.

Deafness after Head Injury

M. REESE GUTTMAN, M.D., CHICAGO, reports that deafness may result after head injury without physical evidence of a cranial lesion and that nerve deafness after skull fracture in a person over 50 years of age is not always due to old age.

Deafness may be caused by skull fracture although the lesion is not evident on roentgenograms. For example, films sometimes appear normal but a basal skull fracture may extend into the middle fossa and involve the temporal bone, thus producing deafness. Roentgen studies should be made early before fibrous union makes bony delineation difficult.

The presence and degree of deafness may be determined by interval audiometric examination. Feigned deafness shows bizarre variations in shape of decibel curve and loss, while true hearing loss exhibits almost identical curves.

Psychogenic deafness after head injury is observed in emotionally unstable and inherently neurotic persons and is true deafness. This deafness is recognized by sudden appearance, disappearance, and change in degree of deafness from time to time without obvious cause. Other hysterical stigmas may be noticeable. The patient has no change in voice and often insists that loud noise causes annoyance and even pain. Responses to the tuning fork are bizarre and variable. The audiogram is frequently saucer-shaped and inclined to rise at both ends.

Deafness, head injury, and the medico-legal ear. Eye, Ear, Nose & Throat Month. 33:734-737, 1954.

Early Recognition of Acoustic Neuroma

F. A. ELLIOTT, F.R.C.P. Charing Cross Hospital, London WYLIE MC KISSOCK, F.R.C.S. St. George's Hospital, London

To reduce operative mortality and prevent permanent loss of function, tumors of the eighth nerve must be recognized and removed before adjacent structures are involved.*

Though acoustic neuromas are accessible and usually benign, operative mortality is at least 10%. Postoperatively, patients often have facial paralysis, visual impairment, unsteadiness of gait, and general malaise.

Morbidity is high because the diagnosis is usually not made until the tumor involves neighboring structures and has caused irreversible changes. Total extirpation of the growth increases the damage.

To detect neuromas early, patients with aural symptoms should be thoroughly examined; Menière's disease or another peripheral aural lesion will be discovered more frequently than tumor. Since neurologic study with caloric and audiometric testing is not feasible for all persons with perception deafness, patients requiring otologic investigation are selected by careful interview and physical examination.

In 75% of instances, perceptive deafness, tinnitus, vertigo, or a sense of disequilibrium short of ver-

tigo is the first symptom. The pa-

tigo is the first symptom. The patient may have twitching of the face, but facial paresthesias and early morning headaches generally occur later. Corneal reflex is reduced and, eventually, cerebellar ataxia and trigeminal sensory loss occur.

Roentgenologic examination may reveal enlarged auditory meatus on the deaf side. The protein level of the cerebrospinal fluid may be elevated.

Caloric responses are usually depressed on the affected side as with many labyrinthine diseases. Though the sign is not diagnostic, a normal response argues against tumor.

^{*}Acoustic neuroma. Lancet 6850:1189-1191, 1954,

Conduction and perception deafness can usually be distinguished by tuning fork tests. Bone conduction is reduced with perception deafness. Unless a person with acoustic neuroma is completely deaf, conduction is generally better by air than bone. However, the Rinne test may be negative so Schwabach's test should also be performed.

Lesions of the cochlea and eighth nerve are differentiated by the loudness balance test. With cochlear disease, full recruitment, decrease in impairment of hearing at threshold as intensity of stimulus increases until sound is heard as well or better with the affected ear

as with the unimpaired organ, is noted. Recruitment is partial or does not occur at all with acoustic neuroma.

When neuroma is not advanced, depression of the corneal reflex is probably caused by involvement of the facial nerve and is not invariably a sign of damage to the trigeminal sensory root. Unsteadiness of gait may result from vestibular damage rather than interference with the cerebellum.

Most patients have nystagmus preoperatively. When a tumor is growing rapidly, the movements may be both vestibular and cerebellar in origin.

Transversoaxial Tomography in Lung Cancer

E. FORSTER, M.D., D. SICHEL, M.D., AND E. ROEGEL, M.D., STRASBOURG, FRANCE, report that horizontal tomographic examination determines the extent of spread of lung cancer to the mediastinum, pericardium, and pulmonary veins.

Plain anteroposterior and lateral films give a general view of the location and nature of a pulmonary tumor. Frontal and lateral tomograms clarify, to some extent, the size and shape of the tumor, involvement of primary or secondary bronchi, and spread of bronchogenic lesions. Bronchoscopic examination may determine the degree of bronchial invasion, and angiocardiograms arterial invasion. None of these methods show involvement of the mediastinum, pulmonary veins, and pericardium.

However, the cylindric and cylindroconic shapes of many intrathoracic organs are clearly outlined in horizontal tomograms, which cut the organs transversely with vertical axis. Degree of tumor fixation, plane of cleavage, and possible extension between mediastinal organs and tumor are shown.

The technic is limited by anatomic disposition of thoracic organs. Sections of the left hemithorax are often difficult to interpret because of the oblique position of the heart and the aortic arch, which may appear as part of the tumor.

Transversoaxial tomography as a valuable help in estimation of operability of pulmonary cancer, J. Thoracic Surg. 27:593-602, 1954.

Prevention of Contact Dermatitis

MARVIN N. WINER, M.D.

Millard Fillmore Hospital, Buffalo, N.Y.

A silicone protective cream is a valuable adjunct in prevention of contact dermatitis.*

Most dermatologic disturbances are caused by contact irritants and sensitizers. Some irritants, such as solvents, acids, and alkalis, are harmful only after excessive exposure. Skin may become sensitized to wool, flour dusts, or plastics after prolonged contact. Urine, saliva, and rectal and vaginal discharges can produce skin lesions.

Skin inflammations of housewives are generally caused by soaps and allied cleansers and are frequently refractory. Industrial skin disorders probably account for more than half of all occupational disease. Some of the usual irritants are solvents, fuels, alkalis, acids, chromates, cleansers, and dyes.

Avoidance of the causative irritants is impossible for many patients. Protective gloves and clothing and ointments may be used to reduce contact with irritants.

Pro-Derna, a cream containing 52.5% silicone in a bentonite base, is generally effective. Silicone compounds are derived from common sand and are nonirritating and nonsensitizing. Pro-Derna is not greasy, does not stain, is easy to use, and is invisible on the skin.

Patients with acute dermatitis are told to avoid exposure to offending contactants, which are identified by questioning the patient and patch testing. Usual therapy with wet dressings, lotions, and antiinfectives is prescribed. Silicone creams are extremely occlusive and exacerbate inflammation if used during the acute stage.

When the dermatitis clears, Pro-Derna is recommended and the patient returns to the source of contact. Adults are instructed to apply a thin film of cream on clean, dry skin each day before starting work. The excess is wiped off. The cream is washed off with a mild detergent before lunch, reapplied before returning to work, and removed again when exposure is ended. Children should bathe daily with soapless skin cleanser and apply a thin film of cream.

Effectiveness of Pro-Derna was evaluated among 84 patients with acute contact dermatitis. The skin disorder did not recur for at least four weeks after reexposure among 87% of housewives, nurses, and secretaries; 80% of children; and 65% of industrial workers.

In 6 instances, poor results were caused by irritation of dyshidrotic skin by the silicone cream. Also, Pro-Derna has limited or no value against solvents and fuels.

^{*}The prevention of contact dermatitis. New York J. Med. 54:2591-2595, 1954.

Symposium on Chronic Ear Infection

Rationale of Therapy

BEN H. SENTURIA, M.D. Washington University, St. Louis

Skin of the outer ear canal or postoperative cavities is often infected because protective epidermal secretions are inadequate.

Normally, epidermal glands are abundant just inside the meatus of the external ear canal and extend along the upper wall to the drum. Oily secretion keeps the surface soft, pliable, and waterproof, inhibits growth of native bacteria, and prevents implantation of pathogens.

Outflow of secretions may be blocked in the ducts or reduced by poor function. In other instances, epidermal glands are scarce in grafts applied after fenestration or mastoid surgery. The most frequent donor site of skin grafts for the ear is the ventral surface of the thigh. Here epidermal glands are not only few, but often lost in excision by split-thickness technic.

The unlubricated skin becomes itchy, dry, and scaly. Orifices of pilosebaceous units and connected apocrine glands are plugged with stratum corneum, particularly if the keratin absorbs moisture from humid air and swells. In healed mastoid and fenestration cavities, dry exfoliating layers tend to form casts, which must be removed mechanically from time to time.

Damage is not severe if the crip-

pled ear is not harmed by irritating fluids or trauma and the environment is cool and dry. However, heat and moisture favor endogenous organisms, and local injury and macerating liquids create ideal culture media for bacteria and fungi. The inflammatory reaction may be slight and easily quelled or severe and complicated by cellulitis, lymphadenitis, or abscess.

To prevent injury, obstructive conditions should be eliminated, if possible, before glands are destroyed. If necessary, some form of artificial ear secretion may be provided.

Full-thickness grafts should probably be used at operation. The best donor sites are axillary and post-auricular regions, where apocrine and sebaceous glands are more plentiful than over the extremities.

As much intact skin as feasible should be preserved in the external auditory canal, and strongly medicated packing is employed with great caution if at all. Preferably, grafts are sutured in place. Postoperatively, formation of epidermal casts may be prevented by home use of dry cleansing agents or astringent irrigations.

If inflammation is already under way, smears and cultures are prepared and suitable medication is begun. Supplementary systemic therapy is necessary if disease extends into the dermis and involves vascular and lymphatic pathways.

Symposium: medical management of chronic otic skin infections. Tr. Am. Acad. Ophth. 58:670-693, 1954.

Laboratory Diagnosis

H. RUSSELL FISHER, M.D.

Los Angeles

Organisms that invade the ear can be identified and bacterial sensitivity to antibiotics determined within sixteen to twenty-four hours in most instances.

Exudate is procured aseptically, with sterile speculum, forceps, and mops. The swab, a sterile cotton-tipped wooden applicator stick, is supplied in a plugged test tube.

The swab is applied to exudate without touching adjacent parts. If exudate is scanty, the swab is saturated with sterile broth culture medium, then pressed partly dry against the inner wall of the tube containing the medium. When the applicator with specimen is replaced in the original container, the end of the stick contaminated by the fingers is cut off with sterile scissors or broken off against the tube wall and removed.

Exudate is sometimes aspirated with a needle and syringe, the latter being washed out with broth medium. To obtain material in acute otitis media, the tympanic membrane may be pierced.

Broth-moistened samples from the office should reach the laboratory within an hour. If delay is unavoidable, an inoculated tube of tryptase phosphate broth is sent to the laboratory with 2 smears on slides. Material that is kept overnight should be refrigerated.

In the laboratory, exudate on the swab is used to make 2 smears and inoculate 2 culture media. One

smear is stained by Gram technic, and the other is reserved for special staining. If an organism not seen in the original smear is evident on culture, contamination is suspected.

A tube of tryptase phosphate broth is inoculated for later reference and subculture. A blood agar plate is employed for quick development of bacterial colonies and determination of sensitivity to drugs.

The rapid combination culture and sensitivity test utilizes paper disks of low concentration: 1 unit of penicillin; 2 to 4 units of bacitracin; 10 µg. of the other antibiotics used. The reaction of *Pseudomonas aeruginosa* to polymyxin B must be shown by the slower tube dilution method.

Inoculum is applied to the blood agar plate in a uniform strip 2.5 cm. wide around three-fourths of the periphery, covering a crescentic area. Zigzag streaks are made with a flamed loop toward and away from the center of the plate, for surface dilution. In the crescent, disks are evenly spaced 0.7 cm. from the plate edge.

The plate is incubated overnight at 37° C., then examined for individual colonies and for zones of inhibition around the disks. Rarely, incubation is continued twenty-four hours longer.

Species of common organisms, or at least genera, can be identified with the aid of Gram-stained smears of each type of colony, except that gram-negative bacilli must be implanted in sugar media for fermentation. Species identification need not be made of organisms in the Proteus and Aerobacter genera. Sensitivity to an antibiotic is shown by a 12-mm. zone of inhibition that extends 1 mm. beyond the edge of the paper disk. If flora are mixed, a drug that affects all types is selected.

Erythromycin is potent against all gram-positive cocci, including strains of *Staphylococcus*, *Streptococcus*, and *Pneumococcus*. Neomycin is also effective.

Streptococci are highly susceptible to most antibiotics; pneumococci are resistant only to streptomycin. The lowest incidence of sensitivity of diphtheroid organisms is 50% with bacitracin and Terramycin.

Gram-negative bacilli are resistant to penicillin, bacitracin, and Erythromycin, and many strains are not affected by streptomycin, Chloromycetin, Terramycin, neomycin, or Aureomycin.

In 378 cultures obtained from draining cavities after fenestration or mastoidectomy, 525 strains were isolated, of which 259 apparently occurred singly and 266 in mixtures. Staphylococci were most common, then intestinal gram-negative bacilli. Among streptococci, the pleomorphic nonhemolytic variety was most frequent.

Therapeutic Results

EDMUND P. FOWLER, JR., M.D., AND
RICHARD FREEMAN, M.D.
Columbia Prophytogian Medical

Columbia Presbyterian Medical Center, New York City

THE most important factor in care of chronic otitis is thorough cleansing of the ear canal or surgical cavity. The involved region is washed out with warm hypertonic or physi-

ologic saline and meticulously dried with sterile cotton before a watersoluble medicament is applied.

All manipulations should be done by an ear specialist. The patient should be seen every day or at least three times a week. At home, the patient may cleanse the ear and instill the antibiotic two or three times a day.

Broad-spectrum antibiotics are satisfactory for more than 50% of patients. Solution NO, S, or T is given initially and can usually be continued after sensitivity studies are completed.

Solution NO is a sulfa-containing reaction product of urea, triethanolamine, processed glycerol, and an ester of benzoic acid. Since granulations may bleed, the compound is not applied to denuded surfaces. Eczematoid skin sensitivity eventually results in 22% of patients.

Solution S contains 5% sulfamylon in 1% methyl cellulose. Though blander than NO, the drug has a narrower spectrum. Gram-positive organisms are most susceptible. Eczematoid reactions occur in 27% of cases, thus either S or NO therapy requires strict supervision.

Solution T, Terramycin in polyethylene glycol, seldom produces untoward effects but is unstable. The antibiotic must be dissolved just before use. Even during refrigeration, potency decreases in a few days, and cold fluid causes vertigo.

Direct application of powdered Terramycin salt is frequently successful although dark brown cake resembling exudate may form. Neomycin or polymyxin B may be mixed with boric acid and used postoperatively as dusting powder. Less vertigo results than with fluids. and cavities heal and dry far more rapidly.

Polymyxin B, available commercially as Aerosporin or Polysporin, works bests on gram-negative organisms, such as Aerobacter aerogenes, Escherichia coli, and Proteus, Neomycin and bacitracin excel with

Staphylococcus.

Penicillin, sulfadiazine, or sulfathiazole should not be used alone in topical therapy, because skin sensitivity may occur. Parenteral doses should probably be given more often for chronic otitis media. continuing for several days after symptoms subside.

Before leaving town for the summer, individuals under prolonged treatment receive ear drops of 80% alcohol saturated with boric acid. Application may keep the canal dry through hot, humid weather, without risk of local eczema, and may prevent otitis after bathing.

Systemic chemotherapy is ineffective if blood vessels are not near enough to the infection, and antibiotics cannot supplant a needed operation. While surgery is being delayed, acute infection may become chronic.

Summary

FRANCIS W. DAVISON, M.D. Danville, Pa.

EXTERNAL ear infections should be managed by an otologist who considers predisposing factors, such as diabetes, overweight, hypothyroidism, allergy, daily habits, and emotional problems.

Correction of systemic faults may accomplish more than local therapy. Laboratory reports are interpreted in the light of clinical data. For example, the basic trouble may be infectious eczematoid dermatitis or neurodermatitis, and the gramnegative rods so often observed may be merely saprophytes.

The ear canal must be kept clean, dry, and acid. Adequate cleansing requires a head light or a mirror over one eye, thin-walled metal specula, a compressed air jet, and small metal suction tips. The metal tip is used as a curet to remove epithelial remnants that obstruct epidermal glands. If proper equipment is lacking and debris is left on the drum, an attic perforation and cholesteatoma may be concealed.

Compressed air painlessly cleans even a canal narrowed by swollen walls. The jet is employed to clear the anterior angle next to the drum and to dry the entire canal. Boric acid powder is next applied with a powder blower, and any surplus is removed with the air jet. At home, boric acid powder is insufflated twice daily with a hand blower.

With the regimen described, radical mastoid cavities dry in six to eight weeks.

Ear drops can generally be omitted. Perhaps the quick healing noted with polymyxin B or neomycin and boric acid powder actually results from the acid or avoidance of solutions rather than from specific antibiotic action of the powder. Antibiotic and sulfonamide drugs often cause allergic reactions and must be used cautiously if at all.

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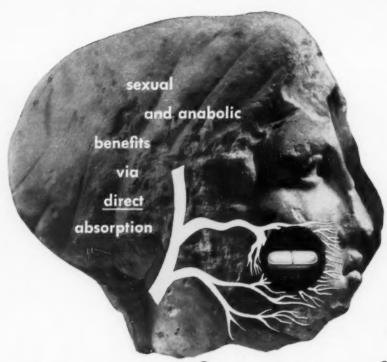
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Special Article

Modern Concepts of the Menopause

An outline for the female patient

LEONARD H. BISKIND, M.D.*

Mount Sinai Hospital, Cleveland

Prepared for Modern Medicine

A woman's life may be divided into three epochs: puberty, with the onset of menstruation; the child-bearing years; and the menopause. It is a sad commentary on the affairs of womanhood that each of these epochs is saturated with anxiety. Much needs to be done from the standpoint of education and guidance to give women an adequate knowledge of female pelvic anatomy and physiology in relation to these various epochs.

Insufficient factual knowledge regarding puberty leads to serious misconceptions and anxiety. Lack of

adequate instruction and preparation for pregnancy magnifies preexisting apprehensions, particularly when based on meager learning and superstition.

In the three previous articles, the subjects of prenatal care, perineal hygiene, puberty, and menstruation were discussed from an instructive and educational point of view. A plea was made for the cooperation of educators, physicians, nurses, and public health authorities in disseminating adequate knowledge to girls and young women in order to relieve anxieties.

Women about to enter the menopause should be given as thorough an understanding of this normal physiologic process as possible. It is evident from material written for lay consumption in women's magazines that this epoch of a woman's life is still cloaked in mystery.

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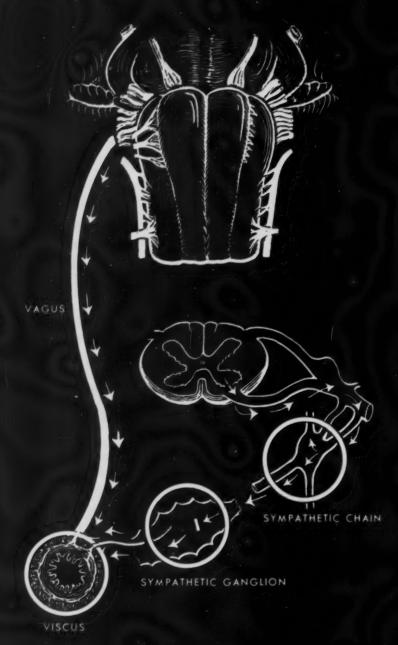
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INTRODUCTION

Too many women believe that life ends with the menopause and that, with the approach of middle age, the menopause will cause them

(Continued on page 148)

^{*}From the Division of Obstetrics and Gynecology, Mount Sinai Hospital, Cleveland.



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Roback and Beal² found that Pro-Banthine orally was an "inhibitor of spontaneous and histamine-stimulated gastric secretion" which "resulted in marked and prolonged inhibition of the motility of the stomach, jejunum, and colon..."

Therapy with Pro-Banthine is remarkably free from reactions associated with parasympathetic inhibition. Dryness of the mouth and blurred vision are much less common with Pro-Banthine than with any other potent anticholinergic agent. In Roback and Beal's² series "Side effects were almost entirely absent in

single doses of 30 or 40 mg...."

Pro-Banthine (β -diisopropylaminoethyl xanthene-9-carboxylate methobromide, brand of propantheline bromide) is available in three dosage forms: sugar-coated tablets of 15 mg.; sugar-coated tablets of 15 mg. of Pro-Banthine with 15 mg. of phenobarbital, for use when anxiety and tension are complicating factors; ampuls of 30 mg., for more rapid effects and in instances when oral medication is impractical or impossible.

For the average patient one tablet of Pro-Banthine (15 mg.) with each meal and two tablets (30 mg.) at bed-time will be adequate. G. D. Searle & Co., Research in the Service of Medicine.

Schwartz I. R.; Lehman, E.; Ostrove, R., and Seibel, J. M.: Gastroenterology 25:416 (Nov.) 1953.

^{2.} Roback, R. A., and Beal, J. M.: Gastro-enterology 25:24 (Sept.) 1953.

to lose their attractiveness, affect their sex life, and deprive them of enjoying their normal daily activities. They develop a feeling of uselessness because, having been freed from the bonds of household duties and the care of their children, they are unable to use their new-found leisure time advantageously.

Women about to enter the menopause should prepare for this normal change in their lives well in advance of its onset. Instead of feeling deprived, fearful, jealous, frustrated, and lonely, they must develop new interests, particularly of a cooperative and communal nature.

To accomplish this, women are encouraged to visit their physicians for a thorough discussion of this physiologic process. Such patients deserve the very best care and understanding. When proper instructions are given, an excellent adjustment can be made to this epoch in life. A thorough discussion of the developmental phase of each individual's problems is necessary before hormones, sedatives, or any other drugs are prescribed for the relief of symptoms.

The menopause is often believed to be associated with a host of nervous phenomena. Many women therefore are willing to accept a form of therapy which they hope will eliminate all anticipated symptoms.

A woman given hormonal therapy frequently continues medication indefinitely without returning to her physician for reevaluation. Results of this practice are often serious. Indefinite and indiscriminate continuation of injected hormals.

mones is also not to be recommended, especially in women with familial backgrounds of malignant disease.

Actually, very few, women require any form of hormonal treatment during the menopause. Mild sedatives and psychotherapy are advised for most patients. However, a word of caution is necessary regarding sedatives: Some women take them for years, gradually increasing the dose to obtain relief until an excessive amount is required to eliminate symptoms. A vicious cycle is thus established that is extremely difficult to break.

The most important aspect of the menopause is a basic principle of education. A great deal more can be accomplished by removing the veil of mystery from the cause and effect of the menopause than can be accomplished by other forms of therapy.

GENERAL COMMENTS

1] Education for the menopause should be started between the ages of 40 and 45. You should visit your physician once a year, starting at least with the birth of your first baby. Early examinations should consist of an investigation of pelvic organs and the breasts, and your physician should be informed of any general complaints or symptoms.

2] Besides the aforementioned examination, your physician will discuss with you the changes that occur in the ovaries and other ductless glands as the menopause approaches. The following instructions have been prepared so that your

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physician—in addition to the time he takes for personal and individual attention—may be able to give you some general information which you can read at leisure.

TERMS

1] By definition, the word "menopause" refers to the cessation of menstrual function. In common usage, however, it has come to mean that period of a woman's life when she has a group of objective and subjective signs and symptoms resulting from changes taking place in the ductless glands, chiefly the ovaries.

2] Other terms used to describe the menopause are the "change of life" and the "female climacteric." These terms describe the interval in a woman's life between the initial decrease in ovarian activity and the establishment of a new equilibrium between the ovaries and the rest of the ductless glands. This interval is rarely less than six months or more than three years.

ANATOMY AND PHYSIOLOGY

1] Undoubtedly, many years have passed since you first became aware of or learned the specific details of the anatomy and the physiology of the female pelvic organs. It might be well for you to review this briefly.

2] The external female organs consist of the lips of the vagina, which surround the openings into the vagina and urinary bladder. The latter is called the urethra. About 1 in. above the urethra is the clitoris. The lips of the vagina run vertically and consist of 2 parts—an outer,

larger and thicker set and an inner, smaller and thinner pair.

31 The internal female organs consist of the womb, composed of the neck, or cervix, which is in the vagina, and the body, or fundus, which is in the pelvic cavity. Attached to the upper portion of the body of the womb are the tubes, extending on either side, with their ends partially coiled about each ovary. The womb is approximately 3 in. long, pear-shaped, and held in position in the pelvic cavity by ligaments. The body of the womb, which is in the pelvis, is 2 in. long. The neck of the womb, which is in the vagina, is 1 in. long. Each tube is 41/2 to 5 in. long and approximately 1/4 in, in diameter. The end of the tube has thin, fingerlike projections which curl about the ovary. Each ovary, held in position at the end of the tube, is approximately 11/4 in. long and 3/4 in. wide, or about the size of the tip of a man's thumb.

4] The vagina is not a cavity in a true sense, but a hollow organ with walls made up of folds of elastic tissue. It can be considered, therefore, as a collapsed, hollow organ, the walls of which are in approximation with one another. The folds of the vagina vary in size and shape in different women. This is due to the amount of elasticity in the tissues of the vagina just beneath the lining. The vagina is 41/2 to 5 in. long and is always situated in an oblique, downward direction. It is parallel to and directly above the rectum. The floor of the vagina actually represents the rectum roof.

5] Deep in the vagina, almost at

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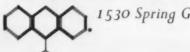
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the bottom, is the cervix. Inside the cervix are glands which secrete a mucus. The purpose of the mucus is to keep the vagina moist at all times. Moisture is necessary in order to avoid friction in the vagina during normal activity such as walking, and, of course, at the time of marital relations and at childbirth.

6] Situated on each side of the lower border of the entrance to the vagina is a small, rounded body, yellowish-red in color, known as Bartholin's gland. Each gland normally produces a mucous secretion and opens externally by means of a duct ¾ in. long at the lower border of the smaller of the vaginal lips.

7] The female perineum is a broad wedge-shaped area between the pubic bone above and the tip of the spine or coccyx below, bounded on the sides by the thighs. The space between these boundaries contains the lips of the vagina, the entrance to the vagina, the opening of the bladder, and the clitoris. Beneath the vagina, at a distance ranging from 1 to 2 in., is the anus or opening to the rectum.

8] The entire perineal area is covered with hair to a greater or lesser degree. For the most part this consists of a heavy growth of curly hair on both larger lips of the vagina and extending upward above the pubic bone to cover a triangular area over the urinary bladder.

9] Sebaceous and sudoriferous glands are numerous in the perineal area. The former produce an oily substance through ducts which open into hair follicles. The latter pro-

duce sweat which emerges onto the skin through the minute, funnelshaped openings of their ducts.

MENSTRUATION

1] Having reviewed the anatomy of the female pelvis, it might be well for you to refresh your memory as to what actually happens during menstruation.

2] One of the most important of the ductless glands is called the pituitary and is situated at the base of the brain. This gland is composed of 2 parts, each of which has numerous functions. One function is production of substances necessary for the initiation and development of menstruation. These substances are absorbed into the blood stream and carried to the ovaries.

3] In the ovaries, two forces are set into action; the first produces a substance, estrogen, which causes the lining of the womb to thicken. The other causes the formation of an egg on about the eleventh to fifteenth day after the onset of the menstrual flow. The process by which the egg ripens and is expelled by the ovary is called ovulation.

4] Each month of a woman's reproductive life, from the onset of menstruation and puberty through the cessation of menstruation at the change of life, she is capable of becoming pregnant. This capacity is nature's method for preserving the species.

5] Estrogen, as previously mentioned, is a chemical substance produced by the ovaries which causes the lining of the womb to thicken in anticipation of a fertilized egg. Should fertilization occur—and this

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normally takes place in a tube—the fertilized egg moves through the tube and embeds itself in this thickened lining which serves as a nest and a source of nutrition for the

early growing embryo.

6] However, the great majority of eggs produced by the average woman are not fertilized and, after living from twenty-four to seventy-two hours, disintegrate. The previously prepared lining of the womb is no longer necessary since an egg will not be fertilized that particular month.

7] The death of the egg sets in motion a chemical stimulus which notifies the gland in the brain that the thickened lining of the womb will not be necessary. In turn, the gland in the brain initiates the production of a chemical substance which enters the blood stream, going directly to the womb and causing the blood vessels directly beneath the lining to break.

8] The blood from these broken, minute blood vessels is sufficient to cause the lining of the womb to be loosened and discarded. Therefore, the final result of menstruation is the rupture of the small blood vessels with the loss of blood and the disintegration and discarding of the lining of the womb.

CHANGES IN THE MENOPAUSE

1] A leading gynecologist has stated that, in general, healthy American women do not enter the menopause much before the age of 46 to 47. However, the menopause may occur as early as 35 or as late as 50 to 55. One investigator, compiling statistics from 32 countries,

found that the average age of the onset of the menopause was 47.

2] Contrary to what you might ordinarily believe, statistics have shown that the earlier the onset of puberty, the later the onset of the change of life. For example, if puberty and menstruation begins as early as the age of 10, menopause may not take place before the age of 50.

3] Conversely, the opposite is true. If puberty and the onset of the menses is delayed to the age of 15 or later, the menopause may take place even before the age of 40. Often it is well to know something of the history of the onset of menstruation and the menopause in the family, since the factors of heredity are important.

4] A point not often mentioned is the fact that the menopause tends to begin somewhat earlier in women who have never borne children and is often delayed as late as the 50's in women who do bear children. The number of children, however, is not of any particular significance.

5] Menstruation has no standard way of stopping. Most frequently, the menstrual flow becomes irregular. These irregular periods gradually decrease in number and amount of flow and eventually stop. In some women the cessation of menstruation is abrupt with no further flow. However, since in the majority of women the menopause is initiated by irregular periods of flow, often in excess of normal, a word of caution is necessary at this point.

6] Every woman in the menopause, particularly those whose loss

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- Sigg, K.: Schweiz, med. Wehnschr, 77:123, 1947.
- J. Transfein A. L. I. Invest Domist, 13:119, 1949





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of blood is greater than usual, should be under the care of a competent physician. Patients with persistent excessive flow during the menopausal menses must be investigated fully in order to recognize and treat possible serious complications.

7] The actual cause of the menopause is now accepted to be the cessation of ovarian response to the chemical substances produced by the pituitary gland. This should be understandable to you if you will review the previous paragraphs in which the mechanism of menstruation is discussed.

8] This cessation of ovarian activity is by no means complete in every woman, which accounts for the fact that a number of women maintain some degree of menstruation for several years during the menopause and probably ovulate to some degree throughout that time. This explains the fact that some women are able to conceive and bear children during the change of life. In fact, the term "change-oflife baby" is well known to most of you.

9] Proof of the foregoing has been established by the United States Bureau of Vital Statistics in Washington, which reports that every year there are many women in this country who between the ages of 50 and 55 give birth to normal living infants.

10] Since some degree of ovarian activity may persist in some women for a number of years after the onset of the menopause, it is of great importance for you to discuss this matter with your physician, particularly if you do not wish to have any more children.

SYMPTOMS

1] Symptoms during the menopause may be divided into two categories: objective symptoms, relating to the irregularity or cessation of the menstrual flow, and subjective symptoms, which may be classified as nervous, circulatory, and general.

2] A great number of women believe that when menstruation stops they are through with the menopause. Nothing could be further from the truth. The change in menstrual flow, even complete cessation of menstruation, is only one manifestation of the menopause. This sign attracts the most attention because it is obvious.

31 It is accepted that the menopause, in the great majority of cases, is the end of the childbearing period. The ovaries, which normally produce estrogen as well as one or more eggs every month, lose their ability to do so by becoming unresponsive to the action of the pituitary gland. It must be remembered that the pituitary, a very small gland in the brain, has many functions, only one of which is the control of menstruation. It is important to remember that the pituitary also exercises a very great influence on all of the other ductless glands of the body such as the thyroid and the adrenals. Since the ovaries become unresponsive to

^{*}For a discussion of the relationship between older women and pregnancy, patients are referred to the chapter titled "Older Women" in the author's book, Having Your Baby, 2d ed., revised, 1955, Random House, Inc.



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 Cass, L. J. and Frederik, W. S.: Malt Soup Extract as a Bowel Content Modifier in Geriatric Constitution, Journal-Lancet, 73:414 (Oct.) 1953. GOOD FOR GRANDMA, TOO!

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one of the functions of the pituitary. the pituitary in turn becomes disturbed and its control over the other glands is also affected. As a result, not only are the ovaries and the pituitary affected, but a temporary imbalance exists among all the ductless glands of the body. This then may lead to a disturbance that involves the entire nervous system.

4] The nervous system is divided into two portions: [1] that which controls our physical health and functions and [2] that which controls our emotions. By some strange mechanism, the disturbance of the pituitary and the related glands seems to affect the emotional life of some women during the menopause and symptoms related to the emotions appear greater than any others. This causes a multiplicity of symptoms which may make the patient extremely uncomfortable. Most women do experience some discomfort at the menopause, but, in many, these symptoms are so slight as to be negligible, particularly when understood. Occasionally, some women have severe disturbances which in rare instances may require medication, but which more often can be helped by educational understanding and brief psychotherapy.

5] Many women, well-adjusted emotionally, have no subjective symptoms whatsoever during the menopause. Others develop circulatory disturbances, irritability, fatigue, and, occasionally, feelings of depression. In a number of instances, besides these symptoms, many preexistent ailments, both

physical and emotional, are exaggerated.

6] The most common subjective symptoms are known as "hot flushes." These are of brief duration, involving chiefly the head and neck and often associated with profuse sweating. They consist of a sensation of unusual warmth in this area which lasts only a matter of seconds. Sometimes these flushes are associated with a very brief sense of depression which disappears almost as rapidly as the flush. The associated sweats may be severe enough to awaken patients at night, thereby producing sleeplessness.

71 Other symptoms include such sensations as feeling "trembly," having "butterflies in the stomach," and hyperexcitability to normal stimuli. Often women during the menopause may be very irritable, easily aggravated, or excited. They are hard to please. The playing of children and other normal noises

seem to annoy them.

81 Women in whom headaches are somewhat common seem to have a greater number of increased severity during the menopause. In most instances, this occurrence has an emotional basis, particularly in relation to repressed hostilities. A thorough discussion of this problem with your physician can often give you sufficient insight into your problems so that you may avoid the development of this symptom.

9] In association with the hot flushes, many women have other subjective symptoms. Some complain of palpitation and shortness of breath: others of fatigue; still

(Continued on page 162)

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others have dizziness, particularly when changing position, often while in bed, and an occasional patient will complain of buzzing or ringing sounds in the ears. All of these subjective symptoms and many others are rarely of any serious consequence and, in almost all instances, are relieved with proper treatment.

10] A few general symptoms seen in women during the menopausal age are not directly attributable to the change in the glandular system. One such symptom is constipation, which at any time during life can be regulated by proper bowel habits. Another general symptom is that of joint pains which may occur any place in the body. In most instances these follow the distribution of what are known as the sensory nerves. Finally, a condition known as menopausal arthritis seems to be associated with this period of a woman's life. Fortunately, this is quite rare and, when present, improves with treatment or does not last an unusual length of time.

TYPES OF MENOPAUSE

1] Another form of menopause is known as the artificial type. This occurs when the ovaries are surgically removed or when the function of the ovaries must be destroyed by either x-ray or radium.

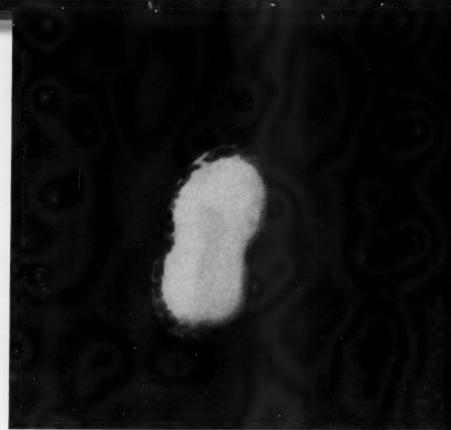
2] As the result of disease, such as infected tubes or ovaries in young women, it sometimes becomes necessary to remove these organs. Fortunately, in recent years, with the use of antibiotics, this operation is not nearly as frequent as

before. When required, removal of ovaries produces what is known as the castration menopause. The reaction on the part of the patient to these operations may be identical with that of a woman entering the menopause at the usual age. On the other hand, in a very few women, the symptoms of the artificial menopause come on extremely suddenly and with great intensity. These symptoms can be almost completely relieved with adequate and proper treatment.

3] In the treatment of certain forms of cancer of the female organs and breasts, destruction of the activity of the ovaries by radium or deep x-ray is considered necessary. This produces what is known as radiation menopause. The reaction is often intensely acute, probably because the nervous relationship within the pelvis is greatly disturbed by the radiation. Fortunately, however, these patients also do quite well with proper therapy.

4] One of the common anxieties in regard to the menopause occurs in young women who, for one reason or another, lose their ovarian activity. The apprehension that the sudden cessation of ovarian function produces is often more acute than the actual symptoms.

5] A word of assurance: Do not be alarmed. Even if such symptoms do occur, medical science has at its command ample therapeutic agents and measures to control such symptoms almost completely and without any danger to the patient if she cooperates fully with her physician.



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SUPERSTITIONS

11 Women believe many superstitions and fallacies about the menopause, many of which have been handed down from generation to generation with little or no clarification by physicians.

21 Since many women have no knowledge of the menopause beyond these superstitions, they have been led to believe that with the change of life, their usefulness to

society is ended.

3] This conception is extremely unfortunate since the menopause in a woman usually comes at a time when her husband is at a period of his greatest productivity in business or profession and at a time when her children are grown up or married. They no longer need the loving care and supervision of a mother, and the husband, being engrossed in his own problems, is completely unaware of the approaching menopause in his wife and the concomitant changes. The beliefs and the superstitions that surround the menopause lead too frequently to feelings of profound insecurity on the part of the wife and mother. When the individual so concerned has had a sense of insecurity and inferiority since childhood, the menopause probably aggravates these feelings to a greater extent than at any other epoch of a woman's life.

4] Another false impression that has been handed down from one generation to another is that obesity occurs as the result of the change of life. It must be stated here categorically and as authoritatively as possible that the only possible way

for a human being to gain weight at any time during life is to have a greater caloric intake than her physical needs require. Translated into other language, this means that the only way a woman may become obese before, during, and after the menopause is to eat more than she requires. Nutritional needs vary with the individual and her physical activities. You cannot gain weight as the result of the menopause unless your caloric intake is of a greater amount than your energy output requires.

5] A great many women believe that the climacteric means the complete end of normal sex life and of physical attractiveness to their husbands. These same women believe that their sexual appetities are governed by the ovaries and that if the ovaries lose their function, their sex life will of necessity diminish. Here again, nothing could be fur-

ther from the truth.

6] The ovaries have little or nothing to do with sexual appetite but are chiefly concerned with the preparation for pregnancy, that is, the formation of an egg and the chemical substance, estrogen, which prepares the lining of the womb for the anticipated pregnancy.

7] Sexual appetite is fundamentally determined by the personality and the character, as well as the childhood training of the individual. In all instances it is governed by our thinking processes rather than by an organ such as the ovary.

81 It is believed that in many women sex feeling may be more highly developed after the menopause than before. One major fac-

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Shigella paradysenteriae

GRAM-POSITIVE Bacillus anthracis

Bacillus subtilis Clostridium histolyticum Clostridium novvi Clostridium perfringens (B. welchii) Clostridium septicum Clostridium sporogenes Clostridium tetani Corvnebacterium diphtheriae Corynebacterium pseudodiph the riticum Corynebacterium species (diphtheroids) Corynebacterium xerose Diplococcus pneumoniae Gaffkya tetragena Micrococcus (Staph.) pyogenes var, albus Micrococcus (Staph.) pyogenes var. aureus Mycobacterium tuberculosis Streptococcus faecalis Streptococcus pyogenes (hemolyticus) Streptococcus mitis

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tor in this reasoning is the fact that women no longer are fearful of pregnancy once they have gone through the change of life. The removal of this fear permits a fuller enjoyment of the sex act.

9] Probably the greatest fear all women have as they approach the menopause is the apprehension that, by some peculiar mechanism, the change of life carries with it the hazard of the development of a depressed state of mind. While some women do have circulatory and nervous symptoms during the change of life, particularly those women who are burdened with many cares and worries, very few actually have depressions that require treatment. In fact, menopause is rarely accompanied by true melancholia.

101 A complete understanding of the mechanisms which cause changes in a woman's body during the menopause will be extremely helpful to you. Only your physician is competent to discuss the causes of some of the circulatory and nervous symptoms that you may have and to tell you what is available to help you. One of the reasons for these instructions is to acquaint you with some of the fundamental factors of the anatomy and physiology of the female organs and the changes that take place during the menopause. If you are thoroughly aware of these normal changes, there will be no reason whatsoever to fear the approaching climacteric.

111 Remember that your doctor can enlighten you in regard to the superstitions that you have heard concerning what might happen to women in this period. You should become aware that the approach of the menopause does not mean that you will have to make any change whatsoever in your normal activities and interests. Remember, too, that the majority of women need very little treatment for their symptoms. In fact, most physicians believe that patients are better off keeping thoroughly occupied in their own activities and interests and refraining from going to their doctors too frequently for medicine and injections.

12] In the late 30's or early 40's. a woman may feel anxious, nervous, and apprehensive. Such symptoms are not always ascribable to the approaching menopause. Changin interpersonal relationships or basic factors in personality and character are more often responsible. You and your physician can be of mutual assistance if you will give serious consideration to this approach to the problems of anxiety and apprehension, rather than placing responsibility on an epoch in your life which has not yet come.

131 Your doctor will tell you that only 15% of women undergoing the menopause have circulatory symptoms, such as hot flushes, which are sufficiently troublesome

to require treatment.

14] Patients who have many flushes throughout the day and night which disturb their rest and produce nervousness, irritability, headache, dizziness, loss of appetite, and other similar nervous symptoms are usually nervous and highstrung individuals. These symptoms

(Continued on page 170)

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References: 1, South. M. J. 31:233 (March) 1938. 2, Bull. New York Acad. Med. 19:478 (July) 1943. 3. Am. Heart J. 18:425 (Oct.) 1939. 4. Minnesota Med. 33:1102 (Nov.) 1950.

To counteract extremes of emotion . . .



tend to come at more or less regular intervals and may be precipitated by emotional disturbances of almost any kind and degree. This group of patients requires treatment of a more specific nature.

TREATMENT

1] For 85% of women, therapy during the menopause needs only to be prophylactic. Sex life will not be affected and physical activity need not be curtailed. Cancer of the internal organs or breasts will not occur as a result of the menopause.

2] Definite procedures have been established for the small group of patients who require treatment. Since the symptoms of the menopause in this group are apparently a result of diminution in the production of estrogen by the ovaries, replacement of a certain amount of estrogen will eliminate the troublesome symptoms.

3] Replacement therapy with estrogen or other glandular preparations is not given to the vast majority of patients who have only very slight symptoms. You should remember that the amount of treatment you receive in the form of substitution therapy is dependent upon your own attitude. A full understanding of what the menopausal period means, together with the elimination of any disturbing influences in your family life and environment, will go a long way toward reducing the amount of substitution therapy.

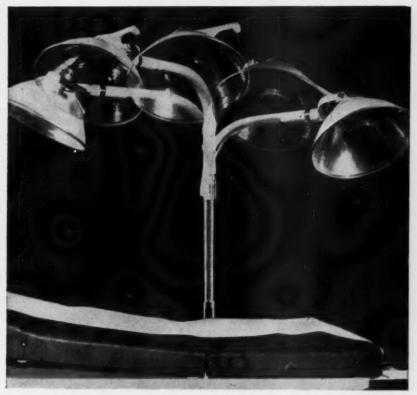
4] Patients who require hormone therapy no longer need hypodermic injections at weekly intervals. Research investigators have been able to produce a synthetic estrogen known as stilbestrol which, when taken by mouth in small doses, can usually eliminate or reduce symptoms.

5] Only your physician can decide what dosage you may require and it is important that you maintain close contact with him in order that he may curtail the use of this preparation as rapidly as possible. It does have certain disagreeable side effects in some patients and, while not dangerous, these can be troublesome.

6] If you receive a prescription for a hormone, do not have it refilled at the neighborhood drugstore without the advice of your doctor. Long use of estrogen or its substitutes may prolong the menopause by keeping ovarian function active. Since most of the symptoms, such as hot flushes, are normally of a temporary nature, it seems folly to maintain substitution therapy for any longer period than justifiable.

7] When, because of family history, a woman should not use estrogen or its substitutes, other forms of therapy are available. One such preparation is the male hormone known as testosterone. This relieves the so-called vasomotor symptoms although it is not as efficacious as the estrogens.

8] As a result of a lack of available hormones in a concentration camp immediately after the end of World War II, it was discovered that vitamin E in the form of wheat germ oil proved an acceptable substitute for the estrogen. Chemically, it is very similar to estrogen and



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acts in the same way as minimal doses of estrogen in controlling the vasomotor symptoms. Here again, however, it might not be considered acceptable to use vitamin E in patients who have a background of

malignancy in the family.

9] Frequently, patients go to their physicians at or about the time they expect the menopause and actually beg the physician to give them some form of treatment which will prevent the development of any of the troublesome symptoms. Most competent physicians in this field consider the prescription of such prophylactic medication highly irrational and unjustifiable. Since 85% of women need absolutely no medication whatsoever in the menopause, with the possible exception of small doses of a sedative at infrequent intervals, it is considered hazardous to allow women to develop a habit in the use of estrogen and its substitutes over a period of what might prove to be years. When estrogens are prescribed, always remember that such medication must be temporary. Never ignore uterine bleeding; report the fact immediately to your doctor.

10] Constant search is being made by pharmaceutical houses through their research departments for new estrogens or estrogenic substitutes for the relief of menopausal symptoms. In general, which estrogen is used does not matter particularly. It does matter a great deal that the particular estrogen be used in as small a dose as is consistent with the relief of symptoms. Regardless of how small the dose, there should always be an interval during which

no estrogen therapy is given, as for example, at least one week out of every four. During this interval mild sedatives may be taken or none at all. Most physicians now deplore the use of estrogens by implantation under the skin or hypodermically, since excellent results can be obtained today by small doses taken internally.

ADVICE TO HUSBANDS

1] Your husband should be permitted to familiarize himself with these comments and instructions in order that he, too, may know what to expect when your change of life occurs.

21 He can be of inestimable value to you in maintaining your morale, in being friendly, cheerful, patient, and, above all, understanding of your symptoms and attitude during the menopause. The capacity of the husband to adapt himself to the problems occurring during his wife's menopause is indicative of his character and personality. If he resents the increased demands you might make during this period and finds himself unable to cope with the situation, he should take the time to visit your physician so that the physiologic changes occurring at this time of your life may be explained to him.

3] On the other hand, you must not use the menopause and the symptoms often associated with it to obtain undue sympathy from your husband or your family. There is a great tendency during this period of a woman's life to feel insecure and, as a result, the need for affection becomes intense. Un-



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consciously, you will make greater demands upon your family. To avoid this, you need to be occupied with endeavors in which you can obtain a good deal of satisfaction.

4] Your husband should be aware of the male climacteric. Men also go through a change of life. However, this usually occurs about ten to fifteen years later in men than in women.

5] In addition, the symptoms among men are much less severe. Only rarely do they have the typical circulatory symptoms such as hot flushes, or the other symptoms mentioned herein. Only rarely do they require any treatment since the majority of men pass through the so-called male climacteric without being conscious of its existence.

6] Your husband should recognize that differences in sexual desire may occur during your menopause. He must endeavor to be understanding, patient, and agreeable.

7] On the other hand, should your own sexual desires either increase or decrease during the menopause, do not be alarmed. A frank discussion of this and other problems of this period of your life with your husband should lead to mutual respect and cooperation.

8] The capacity for both women and men to accept gracefully the changes that come with advancing years is an indication of stable, adjusted, mature personalities.

MENOPAUSE AND PREGNANCY

1] Many women ask whether or not they can conceive during the menopause. Let us repeat here that regardless of what you have heard or read, a woman can become pregnant at any time during her menstrual life. She also can become pregnant during the menopause.

2] No specific signs or laboratory tests prove that a patient is no longer ovulating even though her menstrual periods have stopped. This means that patients using contraceptives should not discontinue their use for at least two years after periods have stopped and they are in the menopausal age.

3] A statement has been made that the cessation of menstruation for a minimum of two years indicates that the ovaries are no longer producing eggs and that pregnancy would be very unlikely. This, however, holds true only for women in the menopausal age group who, by examination, have no demonstrable pelvic pathology.

POSTMENOPAUSAL BLEEDING

1] A word of warning. Nowhere in the field of gynecology does the physician feel so helpless and so disturbed as when he sees a patient who has gone through the menopause without any medical investigation and care and who ignores the onset of postmenopausal bleeding.

2] Until proved otherwise, all physicians consider postmenopausal bleeding as an indication of cancer, either of the neck of the womb or the body of the womb. It is true that bleeding after the change of life can occur from many other conditions. Polyps, or fleshy tumors, arising from the lining of the cervix or from the endometrium are probably the most common be-



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nign causes for such bleeding. Another cause is the bleeding produced by the excessive use of hormones in the treatment of the menopausal symptoms. The bleeding can be caused not only by the excessive doses of hormones but also by the withdrawal of even small doses.

3] It can be readily seen why physicians stress the need for regular pelvic examinations during and after the menopause; the avoidance of any glandular therapy if at all possible in the treatment of the patient's symptoms; a thorough discussion between the patient and her physician of the physiologic changes produced by the menopause so that all eventualities may be thoroughly understood; the use of glandular therapy on an intermittent basis and in as small dosage as is conducive to the elimination of the symptoms.

4] There is a great tendency among patients, once they have completed the menopause, to ignore postmenopausal bleeding. This is of serious consequence. Should you at any time after the cessation of your menstrual flow during the menopause begin to spot or bleed or have a bloody discharge of any kind from the vagina, consult your physician at once.

5] Under no circumstances delay such an examination even for twenty-four hours! Your life may depend upon early diagnosis and adequate therapy.

BREAST CANCER

1] Unfortunately, breast cancer is much too common among women. A great deal needs to be done

in educating all women to properly examine their breasts and to consult competent physicians and surgeons if a lump is suspected.

2] A relationship between the function of the ovaries in production of estrogen and the development of cancer of the breast has been established. This is the reason for the creation of an artificial menopause after operations for cancer of the breast.

3] Many surgeons and gynecologists now agree that after such operations, patients in the premenopausal years should be castrated either surgically or by x-ray. This produces an artificial menopause and may require the same form of therapy as the so-called normal menopause.

4] When patients have had breast operations, they should be instructed in the relationship of the ovaries to the breasts and the need for castration. A proper explanation promoting thorough understanding may be all the therapy the particular patient requires.

5] Should this be insufficient and the symptoms of menopause develop acutely, they can be controlled in the same manner as symptoms which occur during the normal menopause.

6] Another matter in relation to cancer of the breast concerns women of the menopausal age. They have heard that as a result of the menopause, cancer of the breasts is more likely to occur. This is purely a superstition and has no basis in fact whatsoever.

7] Since cancer any place in the body is more common in the fourth

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 Duncan, G.G.: Management of Hypertension, Television Symposium presented by the American College of Physicians, Sept. 23, 1954.

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and fifth decades, it is therefore more likely to occur in women of menopausal age. The menopause itself has nothing to do with the development of the cancer. We cannot stress this point too strongly.

8] If you will develop the habit of visiting your physician once a year for a thorough examination and discuss with him the eventualities of the menopause and the postmenopausal period, you will be doing everything within your power to keep yourself well. The acceptance of certain anatomic and physiologic facts will do more toward stabilizing your attitude than any possible help that you can get from other forms of therapy. The alleviation of anxiety about health is the greatest form of education doctors can employ.

REMINDERS

 One of the leading signs indicative of emotional maturity and stability on the part of any woman is her capacity to accept advancing years gracefully.

2] Education for the various epochs of a woman's life must be continuous from childhood on. It should begin at home, when you, as a mother, prepare your daughter for the anticipated puberty with the onset of menstruation.

3] When marriage and subsequent pregnancy occur, good prenatal instruction is an excellent

method for the alleviation of anxiety at a time when, because of the anticipated baby, it is at its greatest.

4] Having established the practice of visiting your physician annually, you should approach him sincerely and without anxiety in your early 40's so that you may learn the basic facts regarding the oncoming menopause. The acceptance of the physical and emotional changes that occur during the menopause will be of inestimable value in preventing most of the symptoms seen in women during that period of life.

5] With the advancing years, continue the habit of visiting your physician at least annually. In particular, visit him immediately in the event of any pelvic symptoms such as postmenopausal vaginal bleeding.

6] Ask your physician to teach you how to examine your breasts. Consult him immediately if you suspect that you have a lump in either breast. An early diagnosis and operation often produce a permanent cure.

7] A successful completion of the menopause means that you have found new aims in life, that you have developed greater tolerance of others and at the same time are able to give more of yourself, and that you have developed new ambitions not only in the acquisition of knowledge but in the direction of greater social consciousness as well.



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Schwartz, G.: Am. Pract. & Digest Treat. 1:61, 1950.

Medical Forum

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Radical Breast Excision*

QUESTION: What comprises an adequate eradication of breast cancer?

Comment invited from

JULIAN M. SETHER, M.D.
HOWARD A. WEINBERGER, M.D.
WILLIAM C. WHITE, M.D.
CARL O. RICE, M.D.
J. H. STRICKLER, M.D.
THOMAS C. CASE, M.D.
HUGH H. TROUT, JR., M.D.
DAVID H. SPRONG, JR., M.D.

► TO THE EDITORS: En bloc removal of primary breast carcinoma with the entire accessible lymphatic drainage system comprises the ideal operation.

The procedure that is described by Dr. Herbert C. Chase is a conventional radical mastectomy, which has been advocated on surgical teaching services for a number of years, and a reiteration of the wellknown technic. The answer to mammary carcinoma does not lie in this direction.

Today the problem is whether the mastectomy should include removal of the internal mammary chain of nodes and others along the great vessels in the thoracic cavity, as advocated by Urban and Wangensteen. I have had experience with *Modern Medicine, Oct. 15, 1954, p. 69.

the former's chest wall resection done in continuity with a radical mastectomy.

The high incidence of positive internal mammary nodes with negative axillary nodes certainly makes one question the adequacy of our conventional radical mastectomy. The technic of radical mastectomy in continuity with chest wall resection is past the experimental stage. With passage of time and statistical evaluation, this procedure may well become the one of choice in the future.

McWhirter's work with the simple mastectomy in combination with well-planned radiation therapy is worthy of evaluation. It certainly adds support to the practice of routine postoperative irradiation to the mediastinum and axilla after a conventional radical mastectomy has been performed.

The adequate eradication of breast carcinoma presents factors as yet unanswered, such as blood-borne metastases. Meanwhile, with our modern but still primitive surgical approach we should explore the possibilities of more complete removal of metastasis rather than remaining satisfied with the classical radical mastectomy.

JULIAN M. SETHER, M.D. Los Angeles

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TO THE EDITORS: It is interesting that the technic of classical radical mastectomy, which has been so ably detailed by Dr. Herbert C. Chase, has remained essentially unaltered since the original independent descriptions of Drs. Willy Meyer and William S. Halsted near the end of the last century. We practice this technic of en bloc dissection to eliminate anatomic lymphatic pathways and collecting systems with occasional modification as indicated by the individual tumor. The more peripheral lesions are handled with the liberal sacrifice of skin, and split-thickness grafts are frequently necessary.

The apical node, which is usually subclavicular in position between the origin of the axillary vein and the chest wall, is infrequently described but is within reach in the proper dissection. We feel that preservation of the cephalic vein is important because in the presence of extensive disease with local vascular adherence, resection of the axillary vein with the block dissection may be in order. Similarly, we do not hesitate to sacrifice the long thoracic nerve when locally indicated.

In the present state of our knowledge, we believe that classical radical mastectomy in the absence of distant dissemination offers the patient the best therapy. We are still of the opinion that clinical, aspiration, or biopsy demonstration of involved cervical or mediastinal nodes contraindicates aggressive surgical treatment.

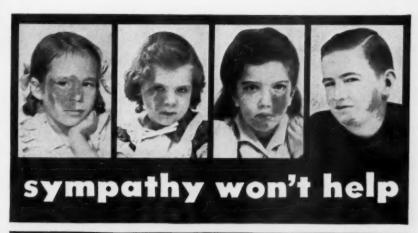
We continue to study the problem with an open mind on two phases of current progress. The first implies a contraction of surgical endeavor in the sense that advocated therapy would routinely consist of excisional surgery or simple mastectomy followed by axillary and chest wall irradiation. The second factor, an extension of surgical therapy in continuity, consists of the addition to the usual en bloc dissection of a medial chest wall flap resection to incorporate internal mammary mediastinal lymph nodes. It is possible that eventually this may be the indicated therapy for the upper inner quadrant lesion, but we have not as yet had sufficient reason to add this approach to our routine.

HOWARD A. WEINBERGER, M.D. New York City

▶ TO THE EDITORS: With surgery, 80% of patients with localized cancer and 30% with cancer with metastases survive five years without apparent recurrence. Obviously, the emphasis by Dr. Chase is not intended for localized cancer but rather weighs heavily in carcinoma of the breast with axillary metastases.

His technic is that followed in many clinics. I must compliment him on his method of biopsy. An improvement would be a rubber dam over the fresh wound before sterilization, as advocated by Haagensen.

Many have demonstrated cancer cell transmission by the knife or gloves. If the cancer is more than local, there is a big chance of spreading cells, in spite of the ut-





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most care. Nevertheless, a complete operation is necessary.

I do not believe that Dr. Chase removes enough skin. My study of the high rate of local recurrence indicates that wide excision with immediate skin graft is indicated for most cases.

WILLIAM C. WHITE, M.D. New York City

► TO THE EDITORS: Until such time as the internal mammary and mediastinal lymph nodes can be safely removed at the preliminary operation, an adequate eradication of breast cancer can be considered only relative.

The excellent general principles enumerated by Dr. Chase can be adhered to. Certainly no one would oppose the following fundamentals although minor variations may become evident:

• The skin incision should be kept wide of the areolas and subareolar lymph cistern. A radiating incision for biopsy should not be done, because in so doing these lymphatic cisterns are entered and extensively manipulated in the process of removing the suspicious mass. In preference to this we make a curved mammary-thoracic fold incision which makes it possible to dissect the entire breast from the pectoral fascia and thereby avoid, to a large extent, traversing the lymphatic channel. By remaining in this relatively avascular area and also in large part between the planes of the collecting deep breast lymphatics, the breast can be turned inside out. From this position, the involved area can be more adequately explored and excised without extensively injuring the adjacent collecting breast lymphatics (Fig. 1).

Although there is some invasion of the breast lymphatics in any instance, the manipulation and trauma should not be as great as from a radiating incision directly over the suspicious tumor mass.

It is further our opinion that a biopsy of the breast should never be done as an independent primary procedure but only as a preliminary procedure to an anticipated radical mastectomy. In 95% of instances,



Figure 1

the surgeon should be able to make an accurate gross diagnosis. If a pathologist is not available when the diagnosis cannot be immediately confirmed, the patient should be transferred to a hospital where such facilities are available before the biopsy is undertaken. To delay a radical mastectomy for a day or two, awaiting the results of a histo-

... no two hypertensives are alike



A. C. can't get along without Rauvera

Diagnosis: Fixed Essential Hypertension, Grade III, no renal or
arteriosclerotic complications,

A. C.: Male, Negro, 31. Blood pressure 225/145, pulse rate 110. Excited, headaches, dizziness. Got good but not optimal reductions with Rautensin after 7 weeks, was therefore put on *combination therapy*—Rauvera, 4 tablets daily at 4-hour intervals after meals. (Each tablet contains 1 mg. mixed purified Rauwolfia alkaloids—the alseroxylon fraction—and 3 mg. mixed Veratrum alkaloids—alkavervir.) This accomplished a prompt additional reduction of blood pressure to 125/80 and of pulse rate to 84. Dizziness, headaches and excitability disappeared.

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A. C. can't get along without Rauvera... for no two hypertensives are alike.

logic section, certainly nullifies all other technical precautions.

A mammary-thoracic fold incision can be easily transformed into a radical mastectomy by using a transverse ellipse around the breast with a vertical extension toward the axilla and rectus sheath. The skin adjacent to these vertical extensions can be dissected back (Fig. 2) in all directions so as to allow adequate exposure and transection of

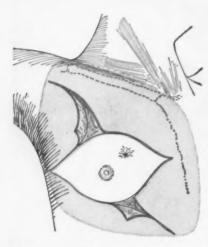


Figure 2

the anatomic structures at their most remote perimeter.

• The lymphatic trunks should be transected at the most remote perimeter. This can be done only if the skin flaps are laid back before any portion of the anatomic dissection is started. The dissection of the skin should be done within its subcutaneous fat, meticulously avoiding the breast substance or the muscle sheaths lest the collecting

superficial lymphatic pathways be invaded by the surgeon's knife. The superficial lymphatics of the breast lie in the areolar tissue plane between the deep portion of the subcutaneous fat and the deeper breast capsule.

Whether a vertical Halsted ellipse is made around the breast or a transverse ellipse is used should make no significant difference as long as the skin dissection is kept within its superficial subcutaneous fat. On the whole, I prefer a transverse ellipse around the breast mass as in most instances this provides more skin for closing the defect over the chest wall.

 Stripping or decapsulating the lymph nodes should be avoided. This would, in large part, follow when the procedure is done by starting the anatomic dissection most peripherally. This may be difficult in the axillary and subclavicular area when extensive lymph node involvement surrounds the axillary vessels or the brachial plexus. Nevertheless, it is important, when possible, to dissect the fat and areolar tissue beyond the most peripherally palpable lymph node without invading the lymph node itself. Although sharp dissection is preferable, there may be instances in which the broader dissection of a dry sponge facilitates keeping the slippery, fat areolar tissue from constantly dropping back into the area that has been dissected. Once these tissues have been dissected from the axilla, they should not be allowed to fall back lest this repeated contact constitute reinoculation.

• The principle of antisepsis-resu-

... no two hypertensives are alike

B. D. needs Rautensin
Diagnosis: Hypertension, Grade II, labile

B.D.: Female, white, 62. Average blood pressure 220/115, pulse: 95. Irritable, sleeps poorly. Placed on twice average dose of Rautensin-4 tablets per day, in two doses after luncheon and at bedtime. Each tablet contains 2 mg. of purified Rauwolfia alkaloids-alseroxylon fraction. After 12 weeks the gradual reduction of her readings reached satisfactory levels. Blood pressure 150/90, pulse rate 80. She now sleeps well, is no longer irritable; she occasionally takes an extra cup of coffee if the sedative effect is too pronounced. No postural hypotension encountered.

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turing and packing the excised biopsy defect with Merthiolate, changing drapes, gowns, and gloves, and
so on—should be considered, although it is certainly not rigidly adhered to by many surgeons. Most
surgeons would use these precautions if they were aware of the
presence of cancer cells on the instruments, gloves, or drapes as Dr.
Chase has been able to demonstrate.

If the initial draping has been done in anticipation of a radical mastectomy, it may seem superfluous to redrape the patient, although I would most certainly recommend changing gloves and instruments that have been in contact with carcinoma tissue.

CARL O. RICE, M.D. J. H. STRICKLER, M.D.

Minneapolis

► TO THE EDITORS: While cancer surgery should be radical, our judgment in cases of breast carcinoma should be rationalized by the consideration of many factors. Two important questions should be considered:

[1] How far has the lesion spread? Direct lymph drainage can occur from the breast to the supraclavicular or mediastinal nodes, bypassing the pectoral or axillary nodes which are most commonly involved. Lymphatic spread through atypical channels to inguinal nodes after blockage of the usual pathways also occurs. Such nodal involvement makes the condition one that is generally regarded as inoperable.

Knowing the great variation in

the rate of growth of breast cancer, the unpredictable lymphatic spread by the numerous pathways, and the fact that the microscopic growing edge of the disease is not clinically recognizable at operation, it is difficult to conceive how any surgeon can determine the precise extent of surgical therapy in order to avoid cutting through diseased tissue.

[2] Will radical surgery extirpate all involved tissue and assure a cure? A host of procedures varying greatly in extent and completeness have been termed radical operations. The inadequacy of the currently accepted radical mastectomy has stimulated efforts to secure better results by an extension of surgery made possible with the development of improved supportive measures. This combination of a desire for better results and the possibility of executing more radical procedures has resulted in drastic destructive procedures without improving the survival rate. The fact that these operations can now be performed without undue mortality does not in itself justify their indiscriminate use. Morbidity is still a factor for serious consideration.

Halsted's early experiences with the more radical procedures were indeed unsatisfactory since his later communications reveal fewer supraclavicular and anterior mediastinal operations. This, I believe, was the result of the realization that in the presence of certain physical findings it would be impossible to circumscribe the tumor by radical surgery.

Keeping in mind the numerous
(Continued on page 194)

... no two hypertensives are alike



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F. E.: Male, white, 39. Blood pressure 210/130, pulse rate 84. Agitated, neurotic. Given Crystoserpine (crystalline reserpine) 0.5 mg. q.i.d. After 24 weeks of therapy the gradual and steady hypotensive action of Crystoserpine produced an excellent response: blood pressure dropped to 120/75, pulse rate to 64. The tranquillizing effects of Crystoserpine changed F. E.'s personality from an agitated, neurotic patient to a cheerful, calm individual who can take the pressure of his work in stride.

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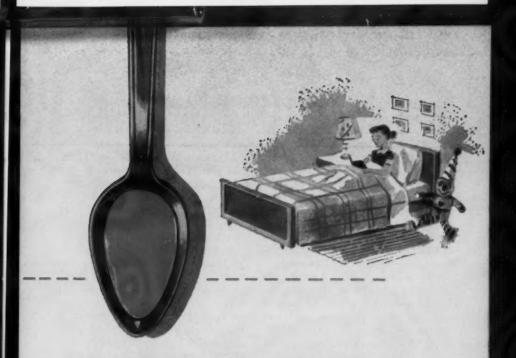
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pathways for lymphatic spread and the early fascial permeation, it appears quite obvious that all lesions do not progress in one direction and that with the most honest and aggressive surgical approach one is never sure of complete eradication unless surgery is employed in very early stage I lesions, in which cases extensive radical procedures would not be indicated.

Needless mutilation should be discouraged, whereas mutilation which would assure the patient of a cure might be justifiable even though the hazard were great. At present no method is available that can guarantee a cure; however, it appears that the simpler procedures with adequate postoperative radiation, in properly selected cases, have definite merit and result in survivals comparable to, if not better than, the radical procedures and with less postoperative morbidity.

THOMAS C. CASE, M.D. New York City

TO THE EDITORS: Of all types of cancer, none has a more unpredictable prognosis than breast cancer. In many organs it is possible to predict a cure in certain cases, and in other organs a five-year survival without sign of recurrence is a good standard to set. However, in breast cancer it is well known that recurrences may be noted many years after the original operation. There are numerous reports in the literature of exactly the same type of tumor reappearing after thirty or thirty-five years of dormancy. With this in mind, it is rather futile

to speak of five-year cures and there are, therefore, increasing numbers of reports in the literature with ten-year follow-ups of breast cancer patients. Even here we know that this is not the end result of therapy. Therefore, when we consider what comprises an adequate eradication of breast cancer, we are faced with a compromise between theory and practicality.

In the past, the greatest stride in the treatment of breast cancer was made toward the end of the nineteenth century by Drs. Halsted and Meyer with their classical reports on radical mastectomy. They removed both pectoral muscles along with the breast and overlying skin and all soft tissue axillary contents, including all glands. The axillary vessels and brachial plexus were stripped off. During the past half century, this has continued to be the standard procedure. Radiation therapy is a valuable adjunct but never the primary treatment for this disease.

In recent years, two opposing trends have developed. The first of these is to do less surgery, with simple mastectomy, and more intensive postoperative irradiation. In the opposite direction have come operations advocated by Wangensteen, Urban, and others, with dissection of the supraclavicular nodes, the internal mammary nodes, and even exploration of the mediastinum. It seems doubtful that the five-year cures will be greatly increased by these more radical procedures, but we must await reports of five- and ten-year follow-ups of a reasonably large series of cases before making



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Rossett, N.E., and others; Ann. Int. Med. 36:98 (Jan.) 1952.
 Jankelson, I.R.: Am. J. Digest. Dis. 14:11 (Jan.) 1947.

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a final decision. When considering radical surgery as a routine procedure, one must decide whether the increased morbidity is worth a possible increased salvage rate. Unless the figures are striking, I believe that this is open to doubt. While McWhirter's work was substantiated by Bradshaw, it has not been generally accepted in this country and even Bradshaw's series was relatively small.

For the present, each case should be individualized. In general, Haagensen and Stout's criteria of operability should be followed, at least as far as any curative surgery is concerned. Having eliminated these patients from consideration, I believe that a classical radical mastectomy should be meticulously adhered to; in addition, in early cases when the lesion is located in the medial portion of the breast, resection of the internal mammary vessels and chain of nodes and a block dissection as advocated by Urban is wise. He has found that a surprisingly high percentage of the lymph nodes in this chain are involved by malignant spread when the lesion lies in the upper inner quadrant, even though the lesion is early. His figures have been confirmed by many others.

All types of adjunctive therapy should be considered, including opphorectomy, hormones, and radiation, all depending upon the case under consideration. With such a program, the number of five- and ten-year survivals should be increased slightly.

HUGH H. TROUT, JR., M.D. Roanoke, Va.

TO THE EDITORS: It is rather widely agreed that radical mastectomy has been the most effective treatment for breast cancer. The paper by Dr. Chase presents well the reasons for the important steps in such an operation.

The extent of skin excision described would seem to me rather minimal. The amount of skin removed should vary with the size of the lesion and particularly with the size and habitus of the patient.

I believe that careful packing and tight closure of the biopsy incision, followed by changing gowns, gloves, instruments, and drapes before beginning the operation, are important. I wonder whether the ordinary antiseptic solutions for packing the biopsy incision are really effective. Perhaps employment of a more caustic solution such as zinc chloride, as advocated years ago by Bloodgood, would be more logical.

Suction drainage for three to four days is more comfortable and more effective than voluminous pressure dressings.

Removal of the supraclavicular nodes as a routine part of the operation has been tried and discarded by various operators, beginning with Halsted. Most surgeons now consider definite supraclavicular involvement as a criterion of inoperability. I predict that involvement of the anterior mediastinal nodes will eventually be considered in the same category. Removal of these nodes was first done as a secondary operation in a few cases by Harvey Cushing, and in 1898 Halsted predicted that this step might well be-

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come a routine part of radical mastectomy.

Rather than trying to devise a superradical operation, it seems much more important to try to get more operators actually to do a radical mastectomy. This, I believe, is the primary purpose of Dr. Chase's paper.

DAVID H. SPRONG, JR., M.D. Santa Monica

Indications for Exploratory Laparotomy*

QUESTION: When is exploratory laparotomy justifiable?

Comment invited from

BENTLEY P. COLCOCK, M.D.
JAMES N. CIANOS, M.D.
HARRY A. DAVIS, M.D.
ROSS Z. PIERPONT, M.D.
MORDANT E. PECK, M.D.
M. G. BAGGOT, M.D.
PAUL C. SWENSON, M.D.

To the editors: One must certainly agree with the conclusions reached by Drs. Felix Wróblewski, George T. Pack, and John S. Ladue that a palpable abdominal mass or persistent abdominal pain which remains undiagnosed after roentgenologic, laboratory, and cytologic study warrants exploratory laparotomy. This is always true in patients with a persistent abdominal mass. It is also true at times in patients with persistent, undiagnosed abdominal pain.

One must be cautious in explaining persistent abdominal pain on a purely functional basis. Often a nervous, tense, or neurotic patient is "Modern Medicine, Oct. 15, 1954, p. 73.

treated for weeks and months because of ill-defined abdominal complaints and at laparotomy an inoperable malignant lesion is found. Lesions of the body and tail of the pancreas are particularly notorious in this regard. Many carcinomas of the stomach present no findings or findings of questionable significance on barium meal examination.

I also agree with the authors' point of not ascribing all abdominal symptoms to recurrence of malignancy in patients who have had previous resections for intraabdominal cancer. Many of these patients have come to necropsy with no evidence of recurrent malignant disease and with a lesion that would have been amenable to surgical treatment.

Exploratory laparotomy, however, should not be advised until careful and adequate studies have been made. Patients with persistent abdominal pain and questionable roentgenologic findings should be observed closely and restudied. A negative abdominal exploration followed by phlebothrombosis and pulmonary embolism may make a too hastily advised laparotomy a real tragedy. This is equally true even though a small fibroid uterus or a small ovarian cyst is found.

One must be particularly cautious in advising surgical intervention for the patient who has previously had several unsuccessful laparotomies for persistent abdominal pain unless evidence is reasonable that a definite lesion, which could account for the pain, may have been overlooked.

BENTLEY P. COLCOCK, M.D. Boston



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▶ TO THE EDITORS: Patients in whom a laparotomy is indicated fall into two categories. In the first are those patients in whom the diagnosis is clear and the consensus of opinion is that surgery offers the best method of treatment. Certainly, there can be no rational objection under such circumstances.

In the second category, however, is a group of patients in whom symptoms referable to the abdomen are not only persistent but also intractable to all forms of treatment. The diagnosis is far from clear or certain. Repeated tests and roentgenograms fail to shed light on the problem and serve merely to exasperate the patient and confuse the physician. In these cases, when a reasonable effort has been made to establish a diagnosis, a laparotomy should be resorted to not only as a diagnostic aid but also to treat whatever disease may be found.

It should, however, be stressed that before a laparotomy is undertaken a reasonable effort must be made to establish a diagnosis. This should include whatever consultations are necessary. There are some who slash and cut their way through innumerable abdominal walls without justification and with the least excuse.

Others operate because of mental indolence; a greater effort is necessary to make a preoperative diagnosis than "to take a look inside." This attitude should be condemned. At the other extreme are those who delay an inevitable procedure because after an exhaustive laboratory and roentgenologic survey, no objective signs are noted.

Wherever one turns today, one theme is incessantly, monotonously, and perpetually reiterated—early diagnosis for more cures. It is obvious that some early lesions, whether in the breast, skull, abdomen, or chest, cannot be found by methods of investigation that are in current use.

Evaluation of symptoms and findings in each individual case in the final analysis depends upon the experience and judgment of the examining physician. It is better to err on the side of a negative laparotomy than miss an opportunity to render lifesaving surgery because of an uncertain diagnosis. When there is no hesitancy in exploring a suspicious lesion of the breast, why should there be a different set of rules when one considers a suspicious lesion located in the abdomen?

Baltimore

JAMES N. CIANOS, M.D.

TO THE EDITORS: Exploratory laparotomy, in my opinion, is justifiable in patients with [1] persistent abdominal pain or discomfort but no abnormal physical or laboratory findings; [2] an abdominal mass when adequate clinical and laboratory examinations have failed to establish the diagnosis; [3] obviously advanced intraabdominal malignant disease to determine if a palliative procedure is possible or advisable and at the same time to verify the diagnosis; and [4] a recent history of abdominal or thoracoabdominal trauma, penetrating or nonpenetrating, when injury to in-



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traabdominal structures or intraabdominal bleeding cannot be excluded.

It is obvious that the largest number of exploratory laparotomies with negative findings will be performed in the first group because neurotic patients will form a higher proportion of this group. Even with this possibility in mind and after a most careful clinical, laboratory, and psychosomatic evaluation, the surgeon will occasionally find that he has done a laparotomy on a patient of this type. This should not be a source of embarrassment to the conscientious surgeon. It is perhaps wise to remember that neurotic patients are just as liable to be affected by organic disease as are nonneurotic patients.

HARRY A. DAVIS, M.D.

Los Angeles

▶ TO THE EDITORS: It is with great trepidation that one approaches the problem of when to perform an exploratory laparotomy. It is unfortunate that laboratory tests carry so many inaccuracies that we cannot develop a more perfect science of diagnosis. However, there are many times when the most exhaustive tests leave us with a patient who continues to have abdominal pain, and it becomes incumbent upon us to prove that nothing is organically wrong to account for the symptoms.

It is my feeling in situations such as this—when the patient has been thoroughly examined, tested, and screened—that abdominal exploration is not only justified but is essential to prove or disprove organic pathology.

The patient should be told that [1] the exploration may be negative and [2] the exploration is simply a culmination of all of the tests that have been done, and that it may or

may not be of help.

Except for the situation in which emergency exploration is necessary, the abdomen should be thoroughly prepared, so that the exploration will be as close to perfect as possible. The bowel should be made ready in the most rigid fashion with five to seven days of preparation with enemas, saline laxatives, restricted diet, and some variety of intestinal antiseptic. The reasons for this careful regimen are perfectly obvious to anyone who has explored an abdomen with a bowel which is less than adequately prepared. The percentage of error in the best hands and under the best possible circumstances must be 5 to 10% in exploratory laparotomy. The percentage of error climbs very steeply from this point, depending on the poorness of the preparation of the intestinal tract.

It is not difficult to recall from experience several cases in which exploration has been very rewarding. One was a young woman who had been through a very fine clinic and referred to the psychiatric division on two occasions. Exploration revealed tuberculosis of the cecum, and this was proved by biopsy of the mesenteric nodes. A second case was that of an 18-year-old girl with several admissions to a very excellent hospital clinic. Examinations of all types were done, gallbladder

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series being repeatedly negative, and psychotherapy being of no avail. Exploration revealed multiple stones in the gallbladder. A third case was that of a patient who at exploration had an accessory spleen removed. This revealed Boeck's sarcoid.

ROSS Z. PIERPONT, M.D.

Baltimore

TO THE EDITORS: It would seem to me that when exploratory laparotomy is considered, certain basic criteria must first be agreed upon, and once these have been established the chance of performing an unjustifiable laparotomy will be nearly excluded. I would like to propose the following:

• The final decision as to exploration must be made by a well-trained,

competent surgeon.

 The experience of the surgeon must preclude the exercise of "good surgical judgment."

 The signs and symptoms of either acute or chronic intraabdominal pathology must be manifest.

 Every indicated diagnostic means, clinical as well as laboratory, must have been used to establish the etiology of the complaint.

In the absence of a positive clinical diagnosis giving clear indications for exploratory laparotomy, suspected recurrence of chronic disease, possibly amenable to a surgical procedure, makes laparotomy justifiable.

When an obviously incurable disease is present, exploratory laparotomy is not justifiable except when [1] the pathologic diagnosis cannot be established by any other

means and such knowledge would be beneficial to future care of the patient or [2] there is some hope of making the patient more comfortable by a palliative procedure. • No exploration should be undertaken without a thorough evaluation and understanding of the individual patient by either the surgeon or the referring physician.

I believe that once these criteria have been met, any differences of opinion, even when they exist among competent, well-trained surgeons, will not be subject to other than healthy critical evaluation.

MORDANT E. PECK, M.D.

Denver

▶ TO THE EDITORS: If indicated, laparotomy is justifiable when care is taken to avoid the related hazards. First, appropriate preparation—gastric evacuation with a Devine tube, blood transfusion, and so on—is required. Overdosage is the only notable intrinsic danger of the standard general anesthetics. The modern anesthesiologist excludes this danger and the common complications.

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bolism, sudden death, dysuria, meteorism, hernia, mediastinal emphysema, adhesions, and hiccups—are familiar sequelae to laparotomy.

Dangerous as open pneumoperitoneum is in the presence of damaged vessels, all usually goes well until the belly is closed, when acute tension pneumoperitoneum arises as relaxation recedes. It is closure, with abdominal disproportion, which generally leads to difficulties and death. That gross disproportion brings early death has been demonstrated in babies born with exomphalos and in some patients whose incisions burst. Contrariwise, excellent progress has been shown to be consistent with a wound agape for days. For physiologic closure, abnormal masses such as air must first be evacuated. The problem then is essentially that of contracting the digestive tract, so that the wound edges meet without tension.

When obstruction and nonviable bowel have been eliminated, intravenous Prostigmin in small repeated doses readily initiates peristalsis; simultaneous suction with a Devine tube expedites the reduction. If the bowel is open, much of its excess can be drained at this point. Postoperatively, Prostigmin should be continued; 0.5 mg. every four hours for three days is satisfactory for most adults. Severe cases need constant suction with a Devine tube for the first day or two and, after bowel resection, for three days at least.

Stay sutures, binders, opiates, enemas, and purgatives are bad.

M. G. BAGGOT, M.D.

St. Louis

▶ TO THE EDITORS: In my opinion, exploratory laparotomy is justified whenever the accepted laboratory and clinical diagnostic methods have failed to explain obscure symptoms, signs, or abdominal masses, provided the patient is a reasonably good surgical risk. The present improved methods of preand postoperative care, it seems to me, have reduced the hazard to a reasonable minimum.

In all cases, however, I think that the patient should be appraised of the situation and, obviously, his consent should be required before exploratory laparotomy is undertaken.

PAUL C. SWENSON, M.D. Philadelphia



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Case MM-282

THE CLUE

ATTENDING M.D: We have a seriously ill man who was in good health until three months ago. At that time, fatigue, afternoon fever, night sweats, anorexia, and sore tongue developed.

VISITING M.D: Several major but nonspecific symptoms and perhaps a more helpful one, the sore tongue. How old is the patient?

ATTENDING M.D: He is a 45-yearold manufacturer's representative. His family physician first examined him two months ago when he returned from a business trip through the South Central states. Symptoms at that time were cough, fever, and an episode of hemoptysis. A chest roentgenogram showed an infiltrative lesion in the right upper lobe.

VISITING M.D: Then he was referred here?

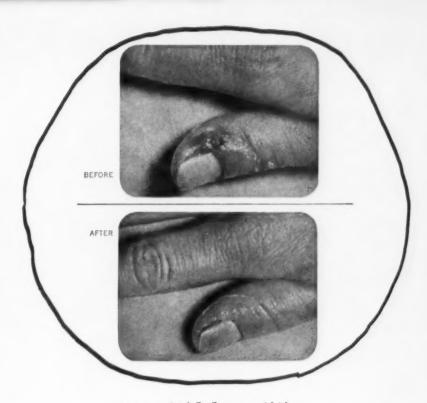
ATTENDING M.D: Not directly. The doctor thought that the patient had active pulmonary tuberculosis and sent him to a private sanatorium. However, cultures and sputum of gastric washings were negative, so he was transferred here for further care.



PART II

VISITING M.D: He had been at the tuberculosis sanatorium several weeks then. The negative bacteriologic studies certainly don't invalidate acid-fast infection.

ATTENDING M.D: The Mantoux reaction was positive, and the patient was given isoniazid and para-aminosalicylic acid while awaiting the bacteriologic reports. However, this treatment didn't influence his temperature, which rose to 100° F. or higher each day. Also, an area of cavitation developed in the right lung, and infiltration appeared in the left upper lobe. Hilar adenopathy became evident, and the patient lost 20 lb. in weight. The other symptoms I mentioned appeared also. VISITING M.D: Isoniazid certainly



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should have protected against those developments. Were other antibiotics tried?

ATTENDING M.D: Yes, during the second week at the sanatorium, he was given large amounts of penicillin without benefit. Here is a transcript of the records. When he was admitted, the only positive physical findings were fever and a few rales over the right upper lobe. Two weeks later, a few cervical lymph nodes became enlarged and slightly tender. These have persisted but have not suppurated. Shortly after that, the resident at the sanatorium felt the tip of the spleen.

VISITING M.D: What were the blood counts?

ATTENDING M.D.: The hemoglobin was 11 gm., leukocyte count 14,000 with a normal differential. VISITING M.D.: No abnormal cells?

ATTENDING M.D: No, the blood smears were sent out for review, and the report was toxic neutrophils but no immature cells. Incidentally, our own bone marrow report was negative for leukemia. My physical examination revealed a cachectic mole with a gray punched-out ulcer on the left anterior margin of the tongue. Because of hoarseness, laryngoscopic examination was done. The vocal cords were edematous, and a small ulcer was seen on the left cord.

PART III

VISITING M.D: No lack of positive findings. Were smears of the ulcer made? I still think tuberculosis sounds likely. ATTENDING M.D: Acid-fast smears of material from both the tongue and laryngeal ulcers were negative.

VISITING M.D: Go ahead.

ATTENDING M.D. Medium and moist rales were scattered over both upper lung fields. Our chest film was similar to the last roentgenogram that I told you about. No pleural effusion was seen, and the heart shadow was normal. Bilateral hilar adenopathy was apparent but not prominent. A grade I systolic murmur was heard at the apex, but the heart was otherwise normal. The liver edge is now palpable 4 cm. below the costal margin and is tender and smooth. The spleen tip descends to a point near the umbilicus on inspiration. There is no ascites, and the extremities are normal except for generalized

VISITING M.D: This could be a malignant condition, especially lymphoma, but I am inclined to consider infection. What about fungous diseases? You say he traveled in the South Central states?

ATTENDING M.D: He had never been in the Southwest, but I did a coccidioidin skin test with negative results. I thought histoplasmosis was a possibility, but that skin test was negative also.

VISITING M.D: Well, the geographic area was right anyway. What other tests do you have?

ATTENDING M.D: Urine contained 1+ albumin and a few white and red cells per high-powered field. Kahn reaction was negawhen
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tive. Spinal fluid was normal, and the electrocardiogram and agglutination titers for brucellosis and typhoid were negative. Aerobic and anaerobic blood cultures showed no growth. Plasma albumin was 3.2 gm., globulin 3.1 gm.

VISITING M.D: We will need some biopsy material. How about one of the lymph nodes?

ATTENDING M.D: We already have obtained that. It showed epithelioid tubercle formation resembling sarcoid. No caseation was seen.

VISITING M.D: This is certainly too malignant a course for sarcoidosis in my experience. I don't know what to think. The picture may still be best explained by lymphoma, despite the biopsy. Maybe we should try nitrogen mustard, but I'd certainly like to get a definite diagnosis first. How about a liver biopsy?

PART IV

ATTENDING M.D: (Next day) The liver biopsy gave us a diagnosis, but not what you thought.

VISITING M.D: What did you find?

ATTENDING M.D: Needle biopsy of the liver revealed *Histoplasma capsulatum*. We were misled by the negative skin test. Apparently when this disease is disseminated and acute, anergy can develop as in tuberculosis. A negative skin test results.

VISITING M.D: Had you made any

fungous cultures?

attending M.D. No, but today I will have the tongue ulcer scraped, and smear and culture for fungus made. I will try to obtain some ethyl vanillate for treatment. May as well determine the complement fixation, too.

VISITING M.D: Good. I hope we aren't too late. The outlook cer-

tainly isn't encouraging.





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Mulcin® contains all vitamins for which Recommended Daily Allowances have been established. Protected potency makes refrigeration unnecessary. Smooth and easy to pour, Mulcin is appreciated by mothers too.

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J. Seidman, M.D. Beverly Hills, Calif.

Mail your caption to The Cartoon Editor Caption Contest No. 1

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METAMINE, the new long-acting nitrate with the lowest dose and least side effects, is now available with butabarbital. widely accepted intermediate sedative. METAMINE with BUTABARBITAL prevents angina pectoris attacks and provides "therapeutic relaxation" to help the patient adjust to a level of activity within his limitations. Dose: Swallow 1 tablet after each meal and 1 or 2 at bedtime. Vials of 50 tablets.

unique amino nitrate

Metamine (2 Mg.) with

Butabarbital (4 GR.)

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214 MODERN MEDICINE, March 1, 1955

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IMPORTANT BENEFITS: Well-tolerated, fast-acting urinary analgesic. Actionconfined to GU tract. Compatible with sulfas and antibiotics.





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NONTOXIC—Analgesia from Pyridium is restricted to the urogenital mucosa. Concomitant administration of Pyridium and sulfonamides or antibiotics is often desirable to relieve pain in the interval before the antibacterials can act.

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REFERENCE: 1. Kirwin, T.J., Lowsley, O.S., and Menning, J., Am. J. Surg. 62:330-335, December 1943.

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HROMYCIN

Sterilization, Insemination, and Abortion

EDWIN J. HOLMAN, L.L.B.

American Medical Association, Chicago

As a measure of self-protection, a physician should be familiar with the legal consequences of sterilization, artificial insemination, and abortion.*

The statutes of several states are explicit regarding the civil or criminal liability of a physician who undertakes a procedure to achieve sterility, artificial insemination, or abortion. Before attempting these procedures, the physician should know what legal responsibilities may be incurred under local legislation.

Sterilization for therapeutic reasons is specifically allowed by statute and legal authority in a number of states. Other states forbid the procedure without medical necessity. Except in the gravest emergency, the patient's consent or, if the patient is a child, the consent of the parent should be obtained before sterilization is done. The right to give such authorization is limited, however, so that an operation cannot jeopardize life without an adequate end in view.

The medicolegal aspects of artificial insemination have not been adequately explored. If the donor is the husband, the child is unquestionably legitimate and ordinary laws of malpractice probably protect everyone concerned. When semen from a donor is used, however, the physician has some responsibility as to suitability of the donor. Even the willingness of the woman or the husband to assume all risks relating to the donor probably does not completely relieve the physician's obligation.

Heterologous insemination does not violate statutes relating to rape, but the procedure might be construed as adultery inasmuch as the child is not the husband's. In civil actions concerning wills or deeds, such a child might be excluded even though conceived with consent. The physician should advise the husband and wife of the legal uncertainties involved.

Abortion without therapeutic justification is illegal in every state. Some states require no consultation before a therapeutic abortion, while others require the advice of one or more physicians. When an abortion is done contrary to law and injury results, a woman is ordinarily barred from recovering damages by reason of consent to the illegal operation. However, as a legal safeguard, the physician should obtain consent of the patient, have consultation with another physician, and maintain adequate records.

Medicolegal aspects of sterilization, artificial insemination, and abortion, J.A.M.A. 156:1309-1311, 1954. now

the first oral liquid penicillin therapy...

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- · in all infections responsive to oral penicillin
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to prevent cold complications, relieve symptoms

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Literature on request

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short Reports

Experimental Medicine

Prevention of Hypertension

Pressor effects of corticoids are inhibited by estrogen. Neither desoxy-corticosterne acetate nor cortisone, alone or in combination with increased salt intake, produces hypertension in estrogen-treated cockerels or estrogen-secreting hens, reports Dr. J. Stamler of the Michael Reese Hospital, Chicago. Inhibition of corticoid hypertension is associated with decreased concentrations of plasma potassium. Estrogen injection of cockerels fed regular diets depresses blood pressure.

Circulation 10:896-901, 1954.

Physiotherapy

Ultrasonic Changes in Bone

Repeated exposure of dog femurs to high-intensity ultrasonic energy may produce osteolytic as well as osteogenic alterations. Doses of either 15 watts of power with a frequency of 1,000 kilocycles per second or 20 watts at 800 kilocycles, applied for 3 periods of five minutes each, consistently produce periosteal reactions, although these may not be evident roentgenologically, report Dr. Nicholas I. Ardan, Jr., and associates of the Mayo Clinic, Rochester, Minn. Of 32 exposed femurs, 13 showed roentgenologic mottling and erosion of the cortex, 11 appeared normal, and 8

showed extensive damage. Osteolytic alterations in dogs exposed to the 20-watt dosage included stages of periosteal reaction, sequestration, dissociation of fractured fragments with nonunion, and progressive resorption of the periosteal reaction and necrotic bone.

Minnesota Med. 37:415-420, 1954.

Biochemistry

Retention of Plasma Expander

Intravenous infusion of polyvinylpyrrolidone (PVP) results in permanent storage of the colloid particles in the reticuloendothelial system. Dr. W. A. Altemeier and associates of the University of Cincinnati report that the plasma substitute was retained in all of 23 patients for at least twenty months after intravenous infusion of only 1,000 cc. of a 3.5% solution. Biopsy and postmortem studies consistently show PVP deposits in the spleen, lymph nodes, liver, marrow, and adrenal cortex. The polymer is less constantly demonstrated in the heart, lung, arteriosclerotic plaques, pancreas, kidney, bladder, prostate, gallbladder, esophagus, and thyroid. Although no significant organic dysfunction is associated with PVP storage in the amounts used, larger doses may induce serious deleterious effects.

Arch. Surg. 69:309-314, 1954.

whole root therapy of hypertension

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SQUISS RAUWOLFIA

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Reserpine accounts for practically all of the *sedative* effect of rauwolfia.

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fast-acting BiSoDoL mints

(contain no baking soda)

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Hematology

Petechiae in Mononucleosis

Purpuric lesions on the mucosa of the soft palate appear to be an early manifestation of infectious mononucleosis. The petechial eruptions are variable in number and size but assume a crescent-shaped distribution at the junction of soft and hard palate, asserts Dr. A. Holzel of the University of Manchester, England. The petechiae are of diagnostic value only in the earliest stages of the glandular disease, beginning between the third and seventh days of illness and fading after three or four days.

Lancet 6847:1054-1055, 1954.

Surgery

Routine Omentectomy

Devascularization of the omentum during standard subtotal gastrectomy for duodenal ulcer may result in a noxious mass of fatty tissue which hinders convalescence. Drs. Paul A. Kirschner and John G. Garlock of Mount Sinai Hospital, New York City, suggest that resection of the partially devascularized tissue should be performed in all instances of subtotal gastrectomy to prevent a process of sterile inflammation, necrosis, absorption, and organization of the omental remnant. Cancer individuals with omentectomy performed during radical gastrectomy recovered more rapidly and with less complications than did gastrectomized individuals in the ulcer group with intact, devascularized omentums. Comparable operative procedures in dogs demonstrated the relative nonviability of the devascularized tissue.

Surgery 36:884-897, 1954.



To Smooth the Puckered Brow of Pain without Narcotics

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ISSUED: Bottles of 30 and 100 capsules.

SHORT REPORTS

Urology

Renal Biopsy in Lupus

Involvement of the kidneys is a frequent complication of disseminated lupus erythematosus. Of 4 patients, percutaneous renal biopsy revealed diffuse glomerulitis in 2 and slight to moderate diffuse subacute glomerulonephritis in 2, report Dr. Conrad L. Pirani and associates of Chicago. Autopsy material from 14 patients showed glomerulitis in 6, glomerulonephritis in 3, and wire-loop lesions in 5. Glomerulitis and wireloop lesions appeared to precede the nephrotic condition, which can be considered a late stage of renal involvement of lupus erythematosus disseminatus.

Proc. Inst. Med. Chicago 20:170-171, 1954.

Endocrinology

Abnormal Brain Wave Patterns

Thyrotoxicosis may be associated with electroencephalographic distortions consistent with convulsive tendencies. Of 27 patients in the toxic stage of hyperthyroidism, 17 had electroencephalographic abnormalities resembling epileptic patterns, report Dr. Joseph V. Condon and associates of the Veterans Administration Hospital, Hines, Ill. No seizures were reported in spite of the high frequency of paroxysmal spike discharges. In most patients, reversion of the electroencephalogram to normal paralleled symptomatic improvement after chemical or surgical therapy.

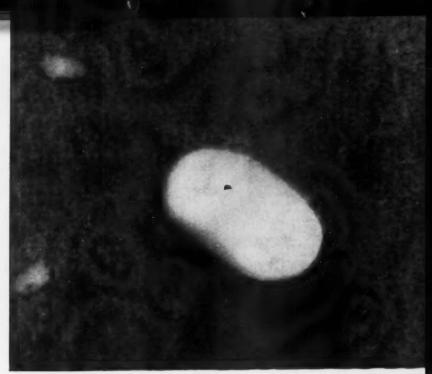
J. Clin. Endocrinol. 14:1511-1518, 1954.



allergic babies...Gerber's Meat Base Formula. It is indicated for those infants whose symptoms may be eczema, pylorospasm, colic, diarrhea, constipation, respiratory difficulties, anorexia or other allergic manifestations.

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ELECTRON PHOTOMICROGRAPH

Aerobacter aerogenes 27,000 x

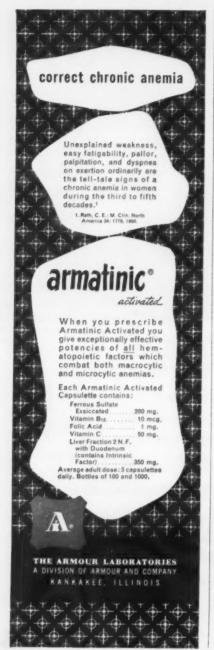
Aerobacter aerogenes (Bacillus lactis aerogenes) is a methyl red-negative, gas-forming organism which, although found in the normal intestine, is commonly involved in urinary tract infections and peritonitis.

It is another of the more than 30 organisms susceptible to

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100 mg. and 250 mg. capsules
125 mg./tsp. and 250 mg./tsp. oral suspension (Panmycln Readimixed)

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Metabolism

Prevention of Diabetes

Induction of diabetes in rats by alloxan is inhibited by simultaneous injections of sodium nitrite or paraaminopropiophenone. Of 40 animals injected with alloxan and the methemoglobin-formers, only 2 became diabetic and 2 died. However. 18 of 44 alloxan-injected control animals became diabetic and 12 died, report Dr. Erwin P. Vollmer and associates of the Naval Medical Research Institute, Bethesda, Md. Apparently the level of blood sulfhydryl determines the protection against alloxan damage of the kidneys and pancreas.

Science 120:944, 1954.

Biochemistry

Diagnosis of Ascites

Ascites due to hepatic or malignant diseases may be differentiated by serum electrophoresis which produces constant and distinct patterns for the two conditions. With chronic liver disease, a variable increase of gamma globulin accompanies low or low-normal alpha globulin levels, while, with malignant disease, low, normal, or slightly increased gamma-globulin levels are associated with marked alpha globulinemia. Dr. H. E. M. Kay of St. Thomas's Hospital, London, reports that electrophoretic patterns from 38 individuals with ascites were of differential diagnostic value in only those patients with hepatic fibrosis or carcinomatosis peritonei. Ascites caused by other diseases such as pericarditis or nephritis produces less characteristic serum protein changes.

Brit. M. J. 4895:1025-1028, 1954.

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OF RHEUMATIC PATIENTS

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In an extensive clinical investigation conducted by five well qualified physicians, treatment with Cobaden, a unique combination of adenosine-5-monophosphate and cyanocobalamin, "... was successful in terms of painrelief, restored mobility and diminished swelling and tenderness in 66 of 70 patients... with osteoarthritis, polyarticular pain, polyarthritis, tendinitis (bursitis), musculofasciitis, tenosynovitis, peripheral neuritis (sciatica) and diabetic neuropathy." 1

1. De Lucia and Stroeberg, Med. Times 82:1, p. 47, 1954.

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 25 mg.

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 1.5%

Injection water q.s.



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SHORT REPORTS

Metabolism

Prevention of Cataracts

Lowering of blood sugar levels by partial starvation inhibits cataract formation in diabetic rats. Decreases of approximately 200 mg, of glucose per 100 cc. of blood were attained in alloxan-diabetic animals starved for forty-hour periods each week. Dr. John W. Patterson of Western Reserve University, Cleveland, reports that diabetic cataracts are not formed when the nonfasting average blood sugar is 450 mg. per 100 cc. or less. The protective mechanism may be attributable to compensatory ketosis from starvation.

Proc. Soc. Exper. Biol. & Med. 87:395-396, 1954.

Radiology

Osteogenic Sarcoma

Massive roentgen exposure of osteogenic sarcomas before amputation does not appear to alter the fatal outcome of the disease. Of 10 children observed one year after treatment with roentgen rays and surgery, only 3 have remained free of detectable disease, 2 have metastases, and 5 have died, report Dr. Kenneth C. Francis and associates of the Memorial Center for Cancer and Allied Diseases, New York City. Amputation of the involved extremities was performed one to three days after completion of irradiation with doses of from 6,000 to 12,000 r.

Am. J. Roentgenol. 72:813-818, 1954.

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CHOLOGESTIN helps the liver make more than 950 cc. of pure bile a day. Contains salicylated bile salts, the most powerful choleretic and cholagogue you can prescribe. In many chronic disorders the bile flow is sluggish and CHOLOGESTIN will help. Especially indicated in gallbladder diseases, gallstones, intestinal indigestion and habitual constipation.

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Terfonyl contains equal parts of sulfadiazine, sulfamerazine and sulfamethazine, chosen for their high effectiveness and low toxicity.

Terfonyl Tablets 0.5 Gm. Bottles of 100 and 1000 Terfonyl Suspension, 0.5 Gm. per 5 cc. Appetizing raspberry flavor · Pint bottles

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"TERFORYL" IS A SQUIBB TRADEMARK

Experimental Medicine Antileukemic Antibiotic

Amicetin, an antibiotic which is isolated from Streptomyces vinaceusdrappus, actively inhibits some strains of mouse leukemia. Mice inoculated with line 82 leukemia live an average of eighteen days when untreated, whereas survival is prolonged to an average of thirty-one days by daily injections of amicetin, report Dr. Joseph H. Burchenal and associates of New York City. Amicetin is more effective against leukemia 82 than are A-methopterin, mercaptopurine, or azaserine, though the antibiotic has no effect against L 1210 and line I leukemias.

Proc. Soc. Exper. Biol. & Med. 86:891-893, 1954.

Radiology Cholangiographic Medium

Urokon is a satisfactory and safe contrast material for operative or postoperative cholangiograms. Injection of 20 to 40 cc. of 30% Uroken through the external limb of a T tube placed in the common duct or through a cholecystostomy catheter provides adequate gallbladder, biliary tree, and calculi visualization, report Drs. Walter M. Whitehouse and Fred J. Hodges of the University of Michigan Hospital. Ann Arbor. Adequate opacity is provided by the 30% solution, but 70% Urokon produces denser shadows without obscuring stones. Urokon seems as safe as Diodrast. Univ. Michigan M. Bull. 20:231-233, 1954.



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Pyridoxine-Thiamine Lederle

For preventing and treating nausea and vomiting of pregnancy

Pyridoxine (B₄) and Thiamine (B₁) have proved more effective in combination than either alone in the prevention and treatment of hyperemesis gravidarum. GRAVIDOX, in both tablet and parenteral form, combines these vitamins, providing you with a nutritional approach to the problem. GRAVIDOX may also be useful for the prevention and relief of the nausea and vomiting associated with radiation sickness.

Each GRAVIDOX tablet contains: Thiamine HCl—20 mg., Pyridoxine HCl—20 mg. Each cc. of GRAVIDOX parenteral solution contains: Thiamine HCl—50 mg., Pyridoxine HCl—50 mg.

Average dose: 5 to 12 tablets daily, in divided doses, at times when vomiting is less likely to occur; or 1 cc. parenteral solution 2 or 3 times weekly.

LEDERLE LABORATORIES DIVISION AMERICAN Cipanamid commune Pearl River, New York

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Diminished cold tolerance, obesity, fatigue, dryness of skin and hair are sometimes the only presenting symptoms "and the elderly patient, resigned to the infirmities of age, is thankful that his discomforts are no more severe."*

With properly controlled thyroid therapy, however, there often occurs a striking change; thyroid "restores the aging individual's zest for living, increases his productivity and will probably retard degenerative processes."*

In such patients, it is particularly important to avoid the dangers of inadvertent overdosage. Because Proloid is assayed twice, chemically and biologically, an unvarying dosage response is assured. Virtually pure thyroglobulin, Proloid can be prescribed in the same amounts as ordinary thyroid, whenever thyroid is indicated.

Available in ¼, ½, 1, 1½, and 5 grain tablets and as powder, for compounding.

 Kimble, S. T., and Stieglitz, E. J.: Geriatrics 7:20 (Jan.-Feb.) 1952.

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the improved thyroid

WARNER-CHILCOTT



"Baseball? Oh no . . . he's just getting ready to tell a patient to give up coffee!"

DO YOU "STRIKE OUT" when you suggest that a patient give up coffee?

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Instant Postum is the ideal solution to "coffee nerves" affecting your caffein-sensitive patients. It offers all the warmth and satisfaction, all the fine full flavor that you'd expect from a good hot beverage.

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Instant Postum

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SHORT REPORTS

Cancer

Hormonal Hemostasis

Diethylstilbestrol therapy may decrease vaginal discharge and bleeding associated with ulcerating lesions of cervical carcinoma. Administration of the hormone to 25 patients with advanced cancer of the cervix resulted in cessation or decrease of discharge, regrowth of healthy vaginal mucosa, and increased sense of well-being in 15, lesser benefits in 4, and no effect in 6, reports Dr. George F. McInnes of the Medical College of Georgia, Augusta. Initial oral dosage of 50 to 100 mg. daily is increased to 600 mg. to maintain hemostasis. Some patients received diethylstilbestrol suppositories.

Cancer 7:1029-1030, 1954.

Gastroenterology

Increased Gastric Retention

Antispasmodics, such as belladonna alkaloids, tend to aggravate pyloric obstruction by inhibiting gastric evacuation. These drugs should be used cautiously for benign pyloric obstruction and discontinued if the patient fails to improve. Barium radiographic studies of gastric evacuation were made in 15 patients with peptic ulcers or pyloric obstructions. Belladonna alkaloids produced or increased gastric retention in 9 patients, reports Dr. Philip Kramer of Boston University. Favorable effects on the pyloric sphincter are negated by the decrease in gastric peristalsis and tone.

New England J. Med. 251:600-605, 1954.



SHORT REPORTS

Atomic Medicine

Eye Damage from Atom Bomb

Energy in the form of visible, infrared, and ultraviolet light rays released by atom bomb detonation is capable of producing thermal burns of the choroid and retina. Due to the focusing effect of the optic system and slow pupillary and blink responses, the unprotected human eye can be injured at distances considered safe from other atomic blast dangers, explain Col. Victor A. Byrnes and associates of the School of Aviation Medicine, Randolph Field, Tex. Rabbits with pigmented ocular fundi developed the burns when placed as far as 42.5 miles from atomic detonations.

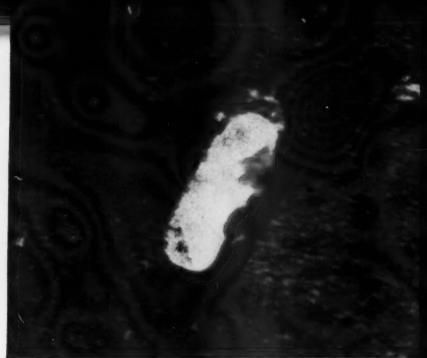
J.A.M.A. 157:21-22, 1955.

Microbiology Serum Vitamin B₁₂ Levels

Low total vitamin B₁₂ concentrations in the sera of patients with pernicious anemia in relapse confirm the nature of the deficiency. The mean total serum vitamin B₁₂ concentration in 20 healthy subjects was 532 μμg. per cubic centimeter with free vitamin present. In contrast, 33 patients with pernicious anemia in relapse had folic acid levels of only 39 µµg. per cubic centimeter with no detectable free vitamin, report Dr. Arnold A. Lear of Boston and associates. Patients with arrest of the disease after folic acid therapy have normal serum vitamin levels.

J. Lab. & Clin. Med. 44:715-722, 1954.





ELECTRON PHOTOMICROGRAPH

Hemophilus influenzae 42,000 x

Hemophilus influenzae ("influenza bacillus") is a
Gram-negative organism which grows only in the
presence of hemoglobin. Contrary to its name, it is not the causative
agent in influenza, but rather is commonly involved in
meningitis • chronic bronchitis • bronchiolitis • tracheobronchitis
supraglottic laryngitis • bronchopneumonia

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Bloomfield, N. J. January 25, 1955 M. J. FOX, Jr. Trensurer Surgery

Steroids and Wound Healing

Suture line strength and healing of intestinal anastomoses in dogs are not adversely affected by ACTH or cortisone administration. Bursting strength, suture line integrity, and microscopic appearance of colon anastomoses are the same in untreated animals as in dogs given daily injections of the steroids, report Drs. Thomas Geoghegan and Brock E. Brush of the Henry Ford Hospital, Detroit. No correlation is apparent between the dosage of employed and the hormone strength or appearance of the anastomoses.

Surg., Gynec. & Obst. 100:39-42, 1955.

Treatment

Diamox Therapy of Emphysema

Patients with chronic emphysema characterized by respiratory acidosis may be relieved by administration of the carbonic anhydrase inhibitor, Diamox. The drug was administered to 4 patients in oral doses of 10 mg. per kilogram of body weight every eight hours for four days. In all patients, significant improvement in the performance of pulmonary function, increased exercise tolerance, and decreased dyspnea on exertion were noted coincident to decreased levels of plasma bicarbonate, report Dr. Charles L. Heiskell, Jr., and associates of Veterans Administration Hospital, Long Beach, Calif. Diamox produces a shift of urine pH to alkaline, increases the excretion of sodium and potassium, decreases excretion of ammonia, but does not alter chloride elimination.

J.A.M.A. 156:1059-1063, 1954,

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Rheumatic Disease

Effects of Aldosterone

Intramuscular aldosterone in sesame oil neither eases symptoms of active rheumatoid arthritis nor significantly reduces erythrocyte sedimentation rate. No antirheumatic effects were observed in 2 patients given larger doses of aldosterone than are effective for individuals with Addison's disease, report Dr. L. Emmerson Ward and associates of Rochester, Minn. Metabolic effects of aldosterone include retention of fluids, sodium, and chloride and sometimes slight reduction in serum potassium.

Proc. Cent. Soc. Clin. Res. 27:134, 1954.

Obstetrics

Pain Relief During Labor

Combined administration of Thorazine, Seconal, and scopolamine may provide safe, satisfactory amnesia, analgesia, and control of psychomotor activity during labor. Thorazine appears to potentiate the effects of the two other drugs in addition to antagonizing the psychomotor hyperactivity sometimes induced by scopolamine, report Dr. Bert B. Hershenson and associates of the Boston Lying-in Hospital. Medication begins with oral or rectal administration of 180 mg. of Seconal for psychic sedation early in established labor, followed by intramuscular injections of 0.4 mg. of scopolamine and 25 mg. of Thorazine as soon as the patient begins to have pain. Subsequent injections of 0.3 mg. of scopolamine with 12.5 mg. of Thorazine are given at

two-hour intervals. Patients with increased psychomotor activity may receive intermediate injections of 12.5 mg. of Thorazine as necessary. The drugs appear to have no ill effects on the fetus. Thorazine in conjunction with morphine or morphine analogues is not advisable, since the antidiuretic and central depressant action of the morphine drugs may be potentiated.

New England J. Med. 251:216-219, 1954.

Surgery

Survival of Ischemic Lung

Temporary occlusion of the hilus of diseased pulmonary lobes may provide a bloodless field for surgery without damaging parenchymal tissue or lung function. The technic was successfully employed by Dr. Brian Blades of George Washington University, Washington, D.C., for segmental or bisectional resection in 7 patients. Hilar occlusion for twenty minutes was of particular value for patients with technically difficult hiluses and incomplete fissures between upper and middle lobes. The tourniquet is placed about the hiluses of both upper and middle lobes to provide sufficient exposure of the segmental hilus in upper-lobe dissections. Occlusion of the lower lobe of the hilus is adequate for dissections of the dorsal division of the lower lobe. In dogs, the blood supply was occluded for as long as six hours without destruction of parenchyma. However, function was greatly impaired after more than thirty minutes of ischemia.

Arch. Surg. 69:525-529, 1954.

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HE AVAILABILITY of such anti-infectives as Terramycin,
Tetracyn and penicillin has not altered the wise admonition
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Otology

Plexectomy for Vertigo

Recurrent Menière-like attacks of vertigo occurring after radical mastoidectomy may be prevented by ablation of the tympanic plexus. Apparently, sacrifice of the chorda tympani nerve during radical mastoid operations prevents vertigo in most individuals, but, in some, the tympanic plexus is an active afferent pathway to the vestibular nucleus and must also be destroyed, explains Dr. Samuel Rosen of Mount Sinai Hospital, New York City. Vertigo, nausea, and vomiting in 5 patients promptly ceased and did not recur after tympanic plexectomy was performed.

Arch. Otolaryng, 60:302-305, 1954,

Hematology

Therapy of Polycythemia Vera

Red blood cell counts are reduced and symptoms ameliorated in patients with polycythemia vera treated with Daraprim. The antimalarial drug, 2:4-diamino-5-(p-chlorphenyl)-6-ethyl pyrimidine, has antifolic acid properties which depress bone marrow erythropoiesis, reports Dr. Raphael Isaacs of the Louis A. Weiss Memorial Hospital, Chicago. An initial daily dose of 25 mg. may be continued indefinitely unless the red blood cell count falls too rapidly or goes below 4,500,000. Then the dose is reduced to 12.5 mg. or medication is discontinued until recovery from excessive fall occurs. J.A.M.A, 156:1491-1493, 1954.

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Therapy for Nonpatent Tubes

Sterility apparently due to nonpatent fallopian tubes may be corrected by Cortogen therapy combined with pelvic diathermy. Cortogen was administered to 8 patients with presumed tubal closure in daily oral doses of 50 mg, with supplements of 100 mg. intramuscularly twice weekly. Diathermy was applied twice weekly. Drs. Lawrence Kurzrok and Eugene Streim of New York City report that conception occurred in 5 of the 8 patients within four months after institution of therapy. No untoward reactions were observed.

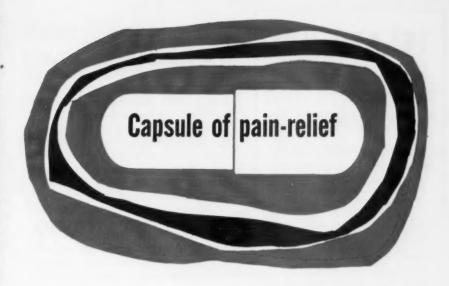
Fertil. & Steril. 5:515-519, 1954.

Hematology

Improved Anticoagulant

A recently synthesized coumarin derivative, marcumar, acts more rapidly and has a more prolonged effect than dicumarol. Anticoagulant action, detectable in ten to twenty-four hours after administration, is due to depression of plasma proconvertin and of prothrombin. Doses of 21 mg. on the first day, 9 mg. on the second, and 3 mg. daily thereafter maintain dilute and undilute prothrombin complex times within therapeutic limits, report Dr. René Bourgain and associates of Cornell University and the Bellevue and New York hospitals, New York City. Constant hematologic observation is necessary since the drug has a cumulative effect and individual and daily requirements in dosage vary. The anticoagulant activity of the drug is antagonized by vitamin K.

Circulation 10:680-684, 1954.

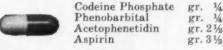


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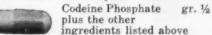
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Originally written up in Journal Lancet Oct. '54



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Research Supplies

Neurology

Ultrasonic Brain Surgery

A focused beam of ultrasound produces discrete, accurately localized lesions in the central nervous system of cats. The procedure may make feasible the severance of deep fiber bundles in man without damage to surrounding tissues, disturbance of blood vessels, cutting of brain tissue, or opening of the dura mater, explain Dr. W. H. Mosberg, Jr., and associates of the University of Illinois, Urbana. Sound intensities of 50 to 1,000 watts per square centimeter and frequencies 15,000 to 20,000 cycles per second are generated electrically in a quartz crystal. Polystyrene lenses focus the sound beam which is transmitted through saline to the exposed dura mater. The intervening nervous tissue is not damaged and only the specific area is destroyed when 4 single-beam focusing irradiators are coupled together and the beams adjusted to intersect at a common point.

J. Neurosurg. 11:471-478, 1954.



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- Grayzel, H. G., Helmer, C. B., and Grayzel, R. W.: New York St. J. M. 53:2233, 1953.
 Heimer, C. B., Grayzel, H. G., and Kramer, B.: Archives of Pediatrics 58:382, 1951.
 Behrman, H. T., Combes, F. C., Bobroff, A., and Leviticus, R.: Ind. Med. & Surgery 18:512, 1949.
 Turell, R.: New York St. J. M. 50:2282, 1950.

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SHORT REPORTS

Surgery

Anoxia with Hypotension

Radial intravascular pressure recordings furnish a more continuous and accurate index of hypotension than does the arm cuff method. Both methods were used during neurosurgery in 26 patients. Hypotension was induced with Pendiomid, Arfonad, or hexamethonium. Dr. Barnes Woodhall and associates of Duke University, Durham, N.C., report that profound hypotensive levels are not recorded by the arm cuff technic. Levels of cerebral anoxia below 50 to 60 mg. Hg are, however, shown in the radial artery where pressure is similar to that of the cranial cavity.

Arch. Surge 69:496-499, 1954.

Metabolism

Hypercapnia and Fibrillation

Ventricular arrhythmias and cardiac arrest may be precipitated by excessive concentrations of respiratory carbon dioxide. Dogs subjected to 30 to 40% carbon dioxide atmospheres for long periods have ventricular fibrillation only in the posthypercapneic stage when allowed to breathe room air or 100% oxygen, report Dr. Will C. Sealy and associates of Duke University, Durham, N.C. The posthypercapneic arrhythmia was always preceded by characteristic alterations in the electrocardiogram and by rapid elevations in the plasma potassium levels.

J. Thoracic Surg. 28:447-462, 1954.

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"Make a routine urine sugar test on every patient."*

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*Barach, J. H.; Duncan, G. G.; Joslin, E. P., and Root, H. F.: Diabetes Mellitus, in Conn, H. F.: Current Therapy 1954, W. B. Saunders Company, Philadelphia, 1954, p. 368.

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SHORT REPORTS

Surgery

Management of Peritonitis

The intraperitoneal administration of buffered solutions of Terramycin affords rapid diffusion of bactericidal concentrations throughout the intraperitoneal cavity. Dr. W. P. Eder and Norma L. Myers of Minneapolis General Hospital report that the administration of 2 mg. per cubic centimeter of Terramycin buffered with an equal amount of ascorbic acid resulted in almost complete recovery within eight days of a patient with acute peritonitis due to Escherichia coli. Reduction of alkalinity to pH 7.6 eliminates pain on injections but does not reduce bactericidal effects. Ann. Surg. 140:867-871, 1954,

Neurology

Anticonvulsant for Epilepsy

Diamox, a carbonic anhydrase inhibitor, may be a valuable adjunct in the management of epilepsy. When given to 47 patients alone or with other drugs, Diamox provided 80 to 100% control of seizures in 29 patients, 40 to 80% control in 6, and no benefit in 12 patients, reports Dr. Sidney Merlis of the New University-Bellevue York Graduate Medical Center, New York City. Number and severity of seizures were decreased, and preand postconvulsive incapacities were diminished. Diamox alone was capable of preventing seizures in only 13 patients.

Neurology 4:863-868, 1954.

IN ANXIETY AND TENSION

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BASIC SCIENCE

Briefs

Enzymology

Control of Aging

Plant growth appears to be restrained by a biochemical factor which may have some general biologic significance in control of the aging process. Application of a growth hormone, indolacetic acid, to some plant cells first produces growth, explain Drs. Arthur W. Galston and S. M. Siegel of the California Institute of Technology. Pasadena. Next, the cells form a specific enzyme, a peroxidase, that can destroy the growth hormone in the presence of peroxide. This enzyme prevents elongation of cells and aids formation of lignin in cellular walls.

Metabolism

Altered Glucose Tolerance

Abnormalities in carbohydrate metabolism may be due to barbiturate addiction. Glucose tolerance of 16 patients, determined during periods of excessive ingestion of sedatives, revealed lag curves, prolonged hyperglycemia, hypoglycemia, or bizarre responses, report Drs. W. H. H. Merivale and Richard A. Hunter of Guy's Hospital, London. The abnormal reactions persisted in some instances over four weeks after withdrawal or reduction of sedatives. Nonbarbiturate sedatives may have similar effects upon carbohydrate metabolism.

Lancet 6845:939-942, 1954.

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"Vaginitis is not at all rare, and there
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Nutrition

Atherogenesis and Diet

Severe caloric restrictions increase the degree of cholesterolemia and atherosclerosis in rabbits fed diets enriched with cholesterol. Animals fed ad libitum showed significantly less biochemical and anatomic alterations than did underfed rabbits given the same cholesterol-supplemented regimen, report Dr. Martin G. Goldner and associates of Jewish and Jewish Chronic Disease hospitals, Brooklyn, Plasma levels of blood cholesterol, fatty acids, lipoproteins, and phospholipids rose when animals were allowed only one-half or one-third of the average food allotment.

Proc. Soc. Exper. Biol. & Med. 87:105-108, 1954.

Physiology Effects of Blood Donation

Removal of 1 pt. of blood does not reduce work capacity under ordinary conditions but has significant limiting effects when increased demands are made on the cardiovascular and respiratory functions. Heart rate, blood pressure, and respiratory gas exchange in response to treadmill exercise reveal impairment of work capacity for the first hour, report Dr. B. Balke and associates of the U.S.A.F. School of Aviation Medicine, Randolph Field, Tex. Physiologic response to exercise returns in forty-eight to seventy-two hours. After eight to ten days, work capacity is restored.

J. Appl. Physiol. 7:231-238, 1954.

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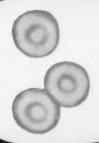
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Medical Malarky

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Sewing Circle

After I gave a lady a hypodermic injection, she said, "What fine needlework. You ought to take up knitting."-B.P.S.

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"...110,008, 110,009, 110,010..."

Expert Opinion

I overheard two women arguing about the cause of death of a friend. One contended that the deceased had not followed the doctor's instructions. "Oh, yes, she did," replied the other.
"She had been taking medicine for weeks."

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Moyer et al.: A.M.A. Arch. Int. Med. 94:497 (Sept.) 1954.

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References: 1. Trussell, R. E.: Trichomonas Vaginalis and Trichomoniasis, Springfield, Ill., Charles C. Thomas, 1947. 2. Novak, Emil: Textbook of Gynecology, ed. 3, Baltimore, The Williams and Wilkins Company, 1948. 3. Karnaky, K. J.: J.A.M.A. 155:876 (June 26) 1954. 4. Bernstine, J. B., and Rakoff, A. E.: Vaginal Infections, Infestations, and Discharges, New York, The Blakiston Company, 1953.

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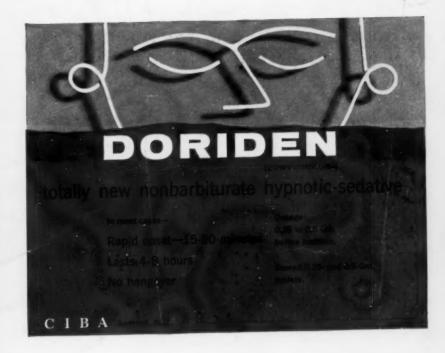
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